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FES PROGRAM PROJECTION SERIES



SHIFTING SITUATIONS affecting the role of the FEDERAL EXTENSION SERVICE

A series of analyses of present national situations and probable trends which may have a bearing upon the changing emphases of Extension education.

The analyses were prepared by committees as an aid to Federal Extension Service staff members in strengthening the foundations of their advisory role with State extension services, and for any value they may have in the States.

FEDERAL EXTENSION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE
Washington, 25, D. C.

April 1956

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Program Projection Series

To Federal Extension Service Staff Members:

O The reports carried herein are commended to your thoughtful reflection and action as required. They were prepared after long, intensive, and penetrating consideration by committees, on one or more of which every staff member participated. The names of committee members are listed at the end of each report. I am personally grateful to all of you for the fine manner in which you became so intelligently absorbed in exploring all possible angles involved in what has been called the "program projection movement."

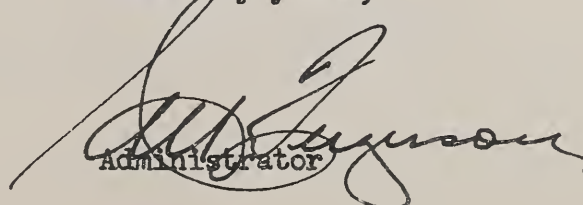
O The Cooperative Extension Service has a high responsibility to bring facts and inspiration to farm people that will help them make their own decisions on profitable adjustments. A long-range flexible educational program which reflects trends and potential impacts upon farming and rural living is useful in keeping Extension alert and equipped to keep pace with changing technological, economic, and social conditions. Such a long-range program is especially beneficial when it is developed by and reflects the thinking and decisions of farm people themselves, as is being done in many counties at the present time.

O However, the Federal Extension Service also needed to bring together from many authoritative sources and to interpret the various factors and elements which bear nationally and regionally upon the immediate future of farming and homemaking, marketing and consumer requirements. This has now been done and the following reports mirror this effort in part. Other reports will be supplied as completed.

O They provide us with ample information to guide adjustments of our efforts. The problem now is to sift, organize, and apply this information in ways to advance progress toward objectives. We should also keep these reports fluid and revised periodically to reflect the constantly developing and changing picture.

O Please review the statements carefully, consider ways in which their message applies to your particular field of effort, and make such adjustments in your operations as would be necessary to reflect the changes envisioned.

Sincerely yours,


Administrator

Program Projection Series

C O N T E N T S O F S E R I E S

No. 1 - Basic Assumptions.

No. 2 - Population, Labor Force, and the Family.

No. 3 - Family Living:

3a - Family Living Costs.

3b - Food and Nutrition.

3c - Clothing.

3d - Housing, Equipment, and Furnishing.

3e - Child Development and Family Life.

3f - Health.

No. 4 - Community Services.

No. 5 - Commodities:

5a - Meat Animals.

5b - Dairy.

5c - Poultry.

5d - Cotton.

5e - Grains and Forage.

5f - Fruits, Vegetables, and Potatoes.

5g - Forestry.

No. 6 - Use and Conservation of Natural Resources.

Since the pamphlets in this series provide guidelines for frequent consultation in making adjustments in operations, they have been provided with punch holes. It is suggested that you place them in a binder for constant reference and use. Revisions may then be substituted when issued.

Basic Assumptions for Program Projection

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DISTRIBUTION: State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; subject-matter specialists and economists concerned.

Report No. 1

BASIC ASSUMPTIONS FOR PROGRAM PROJECTION ^{1/}

The following assumptions are based on the premise that during the next decade:

- (a) There will not be war, but a condition of competitive coexistence will continue that will not encourage reduction in the defense program.
- (b) The United States pricing system will continue to be the major force in allocating resources to various segments of our society in the proportion to which they contribute.
- (c) There will be continuous advance in technology and education.

190 Million People by 1965.—The total is expected to increase from 165,248,000 in mid-1955 to about 178 million in 1960 and 190 million in 1965. These data would indicate an increase of about 8 percent from 1955 to 1960 and 15 percent from 1955 to 1965. A slight increase is expected in the proportion of individuals under 15 years of age and 65 years and older.

The proportion of the increase in population is expected to be greater in the West, particularly in the Pacific Coast States, than in other areas -- a continuation of recent trends. Further declines in the proportion of the population in the Northeast and Midwest States are expected. The South is expected to share in the increased population at about the same rate as during the past 30 years.

Less Than 10 Percent on Farms.—Farm population is expected to continue to decline, but the big shift has already occurred. In 1954 the 22 million people living on farms were 13½ percent of the total United States population. Best estimates indicate farm population will be down to 20 million by 1965 or earlier and, ultimately, it may be reduced to 17 or 18 million, less than 10 percent of the total population.

Bigger Labor Force.—An increase is expected from 67.8 million in 1954 to 72 or 73 million in 1960, or an increase of around 6 to 8 percent. For this projection, unemployment is assumed at not more than 5 percent of the labor force.

Output of Goods and Services.—Total United States output is expected to rise at a rate of around 3½ percent per year (conservative compared with recent gains). Output per man-hour will probably rise around 2½ percent per year. Agricultural output per man-hour is expected to rise at least as rapidly as nonagricultural output per man-hour.

^{1/} See list of references at end of report.

The downward trend in average annual hours worked per man in agriculture and in private nonagricultural industries continues. This reduction in the work week could take the form of more time for vacation and recreation.

The gross output of the United States economy will depend largely on the continuous expansion of spending by consumers, business, and government. While further demands in the economy are expected from local, State, and Federal Governments, the percentage of the total output going to government is expected to decline from present levels. Investment by business is expected to rise sufficiently to provide growth in productive capacity and increase in investment per worker.

The above would provide a slight increase in the consumers' share of the gross product from 1954 to 1960.

Value of Gross Output Up One-Fifth.—This increased spending would result in an increase in our gross national product, based on 1954 dollars, from an estimated 360 billion dollars in 1954 to 435 billion dollars in 1960. That is an increase of about one-fifth. Per capita disposable income is assumed at \$1,725 in 1960 (1954 dollars) as compared with \$1,547 in 1954.

Savings out of disposable income are assumed at about 6 percent, somewhat below the relatively high rate of nearly 8 percent in 1953.

Industrial Shifts.—Shifts in the relative importance of industry in the various regions of the United States are expected to accompany population and income shifts. Some shifts may result from dispersion of defense establishments and from new sources of energy.

Monetary and Fiscal Policies.—Monetary and fiscal policies are expected to be such that credit will be available for the projected economic growth of about one-fifth from 1954 to 1960. These policies are expected to be flexible and have a stabilizing effect on tendencies toward inflation or deflation.

General Price Level.—Though there will be changes in some prices, for the purpose of this projection, no change in the general level of prices is assumed.

Government Programs.—These programs will have as their objectives improved levels of living for farm, rural nonfarm, and urban families and communities, and providing the people of the United States with an adequate supply of nutritious food and a supply of natural fiber at reasonable prices.

Changes in Consumer Demand.—Population growth is assumed to add directly to the demand for farm products during the 1955-60 period. This will vary with different types of products. The proportion of younger and older persons in the population and changes in the regional distribution of our population will have some effect on the relationship between population growth and demand for farm products.

Expansion of spending by consumers and decrease in the percentage of savings from the 1953 levels will be reflected in a rise in the level of living, particularly of families now in the middle and low income groups.

Food, housing, equipment, and services will account for a major part of this rise. Clothing and soft goods will rise slightly over present levels.

Diets To Be Upgraded.—With higher real incomes, particularly in the low and middle income brackets, diets are expected to be upgraded. The effect of this upgrading of diets will be expressed in further per capita increases in the consumption of high-protein foods and fruits and vegetables, which will require more food-producing resources per capita than present diets. Per capita consumption of starchy foods is expected to continue to decline.

In the longer run, the effect of increased real incomes of consumers on the demand for agricultural products at the farm level may be less than would be expected by past experience. As real incomes rise, consumption of agricultural products may respond relatively slowly. Although consumers will upgrade their diet, their total consumption of food tends to rise percentagewise much less than income. In other words, the demand for food is relatively "inelastic" with respect to income.

Demand for Marketing Services and Processing is expected to increase and the bulk processing which accompanies these increased services at or near the source may result in less waste in the marketing channel.

Exports of agricultural products are assumed to remain around 1955 levels.

Total Farm Production.—A continued increase in aggregate farm production is expected from 1955 to 1960. The resources needed for increased production will be available.

It is assumed that more aggressive steps will be taken to bring production into balance with demand between 1955 and 1960. The proportion of the total production in excess of consumption at reasonable prices is expected to decline during this period.

Imports of the noncompeting agricultural products are assumed to continue to rise with growth in population and rising incomes.

Farm Costs, Capital Investment.—Farm costs are expected to be steady to slowly rising during the 1955-60 period. The increase is expected to be mainly in the cost of industrial items.

The overall capital investment needed to farm a given acreage will increase slightly. Investments in machinery and equipment will show a gradual increase as mechanization and specialization continue.

Land values are not expected to show much further increases, even though the pressure to increase size and efficiency of business will continue. Close profit margins will be a deterrent to further increases in land values.

Farm Price Level by the year 1960 is expected to be slightly above that in 1955.

Use and Conservation of Natural Resources.--The land, water, wildlife, and mineral resources are of sufficient potential to meet the needs of the people of the United States for food, wood, fiber, and the products required for the maintenance and improvement of the agricultural plant. However, the competition for some natural resources, notably water, will increase, and more attention will be given to its use and conservation. Other resources, such as soil and timber, will be further developed.

Community Services.--The community will continue to grow larger and more complex. Rural-urban distinctions will further diminish. Demands for services will continue to increase. It will be important to continue to work with people on a local basis.

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(The assumptions in this report were arrived at primarily from the following references and from consultation with the appropriate specialists in the Department of Agriculture and other governmental agencies.)

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Program Projection Report No. 2

POPULATION, LABOR FORCE, AND THE FAMILY

The information contained in this summary was compiled from a number of basic sources which are listed at the end of the report. The original sources are numbered and are cited at the end of each topic to indicate the particular source from which the material was obtained. Readers of this summary should refer to the original sources for more detailed information, for information about methods used in preparing the source publications, or the particular technique used in making any projections or analyses.

Parts of the summary consist of verbatim quotations, summaries of material contained in the source publications, and interpretations and original material prepared by the committee members.

Distribution:

State and assistant State extension directors;
State and assistant State leaders and district
agents in agricultural, home demonstration, and
4-H Club work; extension editors; and subject-
matter specialists and economists concerned.

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Population

TOTAL POPULATION GROWTH ASSUMPTIONS

By 1965 the total population of the United States will reach an estimated 190 million. This projection assumes that the 1950-53 fertility rates will remain constant through 1965. It assumes a reasonably high and sustained economic activity through 1965 and reflects the fact that in the past, under high-level economic conditions, actual birthrates and population have run close to or in excess of high population projections.

Population 14 years of age and over is estimated at 137 million, reflecting solely the projection of mortality rates, since all individuals in this group have already been born.

The number of households is estimated at 56 million, an average of 3.4 persons per household -- about the present figure. The increase from 1960 to 1965 is based on the assumption of a slight upward trend in the propensity of persons to have homes of their own. A conservative estimate would be about 54 million.

LABOR FORCE GENERAL ASSUMPTIONS

The total labor force in 1965 is assumed to be 79 million, which, allowing for 3 million in the armed services, would give a civilian labor force of 76 million.

Unemployment is arbitrarily assumed at about 4 percent of the civilian labor force, or 3 million -- close to the average percentage of the postwar years. Consequently, total civilian employment would be 73 million as compared with 61.9 million in 1953. About 5.5 million persons are assumed to be employed in agriculture as compared to 6.7 million in 1953. The decline reflects the long-term trend of agricultural employment but at a lesser rate of decline than in recent years.

About 7.5 million persons will be in civilian government - Federal, State, and local - as compared with 5.9 million in 1953. This implies about the same number of Federal employees but an increase in State and local government employees in such activities as education and highways, as increases in population result in a need for more employees to carry out existing government services.

The remainder, 60 million persons, as compared with 49.3 million in 1953, are assumed to be engaged in private nonagricultural industries, which include those Government employees who work in Government business-type enterprises. (10)

POPULATION (Millions)

	<u>1955</u>	<u>Percent</u>	<u>1960</u>	<u>Percent</u>	<u>1965</u>	<u>Percent</u>
Total	161.4	100	177.8	100	190.3	
Farm	22.2	13.5	20.0	11.1	18.0	9.4
Nonfarm	139.3		157.8		172.3	

FARM POPULATION CHANGING

In 1930 we had 43.8 percent farm and 56.2 percent urban people. Today, 20 years later, and under the new urban definition, we are 64 percent urban and 36 percent rural. Only 15.3 percent of our rural population actually live on farms. The other 20.7 percent is characterized as rural nonfarm. Some of this increase is due to the new definition of "urban" adopted in the 1950 census. However, the farm population in 1950 would have been about 9 percent larger had not the new definition been used.

While the population as a whole increased 14.5 percent from 1940 to 1950, there was an increase of 43.2 percent in the rural nonfarm population, and a decrease of 23.6 percent in the farm population. The rural nonfarm population includes persons living outside urban areas who do not live on farms, such as isolated nonfarm homes in the open country, villages and hamlets of less than 2,500 inhabitants, and some of the fringe areas surrounding unincorporated places. Urban place refers to a concentration of population of 2,500 or more.

When the first census was taken, the average family contained 5.7 persons. Today, the average family contains 3.6 persons. In 1950 there were only three States in the country which averaged more than two children per family -- North Carolina, South Carolina, and Mississippi where the average is 4.1 persons per family. The Pacific States -- Washington, Oregon, and California -- have the smallest families in the country averaging 3.3 persons. Rural families are somewhat larger than city families, and city families are smaller than suburban families. The average rural family has 4.13 persons; a city family 3.44 persons.

MODERN FAMILIES MOVE ABOUT

It is estimated that some 30 million families changed residence during World War II. About one-fifth of the population changed residence from 1949 to 1950. Suburbanites are the most frequent movers. A smaller percentage more of the rural population than city people moved between 1949 and 1950. There were regional and local differences with most mobile populations in the West and the South.

THE POPULATION IS AGING

The median age in 1950 was 30.2 years. Over one-fifth of our population is over 50 years of age. The older population is in the urban areas and urban sections of the country. An estimated 3 million persons lived in

hotels, rooming houses, and other places not exactly family households. Most of these people are elderly. (9)

HOW BIG A FAMILY?

"In many ways the most remarkable aspect of the recent baby boom has been not the staggering totals it produced but the way those totals break down. Specifically, Americans have not only been having more children, they have been having more second, third, and fourth children. Gallup Polls, taken in 1941 and 1945, indicated then that the Americans' conception of the 'ideal' family size was changing. The 1941 poll showed 40 percent of the women twenty-one to thirty-four wanting only two children. By 1945 this had been reduced to 25 percent. The big gainer was the group favoring four children; it moved from 21 to 31 percent of the total.

"Since about 1945, American women have been making this altered ideal something of a reality. The change, furthermore, has been felt all along the income scale. While the middle- and higher-income families, who traditionally did most of the family planning, have been planning for more children, the huge rural and immigrant low-income families--of more than six children, say--have been slowly disappearing. The middle classes, at least, are approaching a new norm; and it seems to center around families with three or four children." (7) 1/

Population projections are based on the assumption that there will be no disastrous war, major economic depression, epidemic, or other catastrophe.

TOTAL POPULATION EXPECTED TO INCREASE RAPIDLY

Actual population, 1950 and 1955, and estimates for 1960, 1965, 1970, and 1975:

<u>Year</u>	<u>Population (thousands)</u>
1950	150,216 (12)
1955	165,248 (11)
1960	177,800
1965	190,300
1970	204,600
1975	221,500

FARM POPULATION IS EXPECTED TO DECLINE IN ACTUAL NUMBERS AND BECOME SMALLER PROPORTIONATELY

These figures are for civilian population living on farms in areas classed as both rural and urban regardless of occupation:

1/ Reprinted from "The Changing American Market" by Special Permission of the Authors, the Editors of Fortune; 1955 by Time Inc.

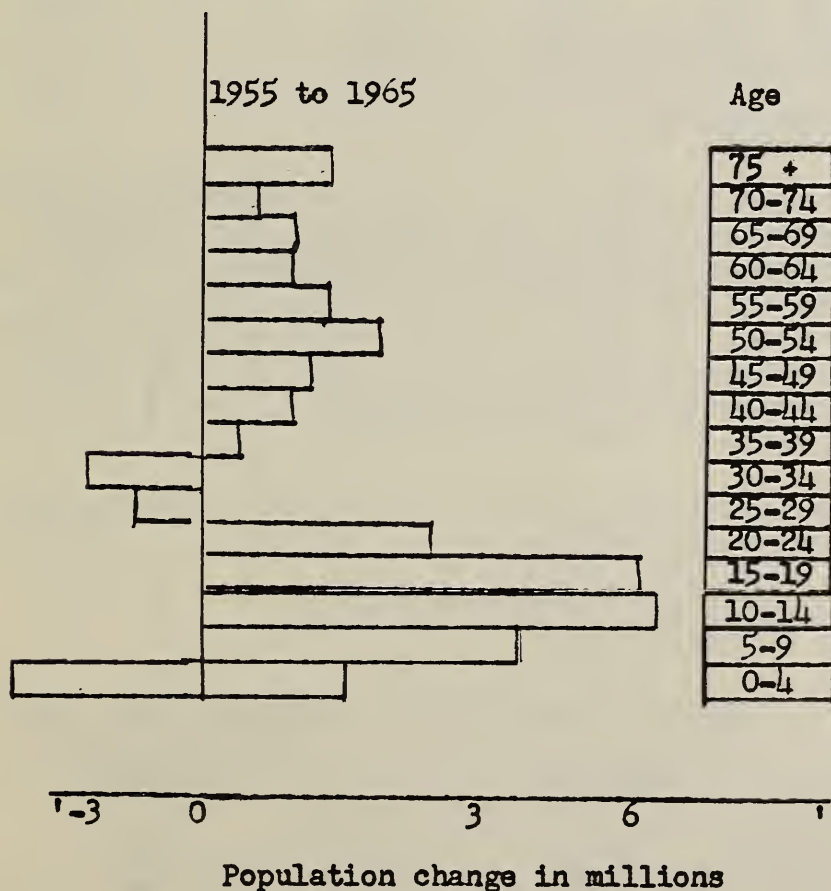
Farm population 1950 and 1955 (3)

Thousands:	<u>Total</u>	<u>Male</u>	<u>Female</u>
1950 (April)	25,058	13,039	12,019
1955 (April)	<u>22,158</u>	<u>11,478</u>	<u>10,680</u>
Decrease	2,900	1,565	1,339

Age groups 1955 (thousands) (3)

	<u>Total</u>	<u>Male</u>	<u>Female</u>
Under 14 years	6,940	3,542	3,398
14 years and over	15,218	7,936	7,282
14 - 17 years	1,773	955	819
18 - 19 years	698	382	315
20 - 24 years	1,151	550	601
25 - 44 years	4,960	2,511	2,450
45 - 64 years	4,588	2,386	2,202
65 years and over	2,049	1,152	896

Estimated changes in population by age groups: 1955 to 1965 (11)



Estimated population and projection
by age and sex
July 1, 1955 (in thousands) (11)

Age	Male	Female
	Current Estimate	Current Estimate
All ages.....	82,004	83,245
Under 5 years	9,325	8,982
5 to 9 years	8,764	8,384
10 to 14 years	6,785	6,555
15 to 19 years	5,682	5,504
20 to 24 years	5,399	5,367
25 to 29 years	5,807	5,937
30 to 34 years	6,071	6,321
35 to 39 years	5,686	5,914
40 to 44 years	5,496	5,713
45 to 49 years	4,988	5,103
50 to 54 years	4,348	4,461
55 to 59 years	3,837	4,002
60 to 64 years	3,257	3,433
65 to 69 years	2,587	2,767
70 to 74 years	1,896	2,183
75 years and over	2,076	2,619

PROSPECTS ARE FOR LARGE GROWTH

By 1975 an estimated 60 to 65 percent will consist of persons born before 1955. It appears that persons in their late teens and early twenties representing roughly the college-age group -- 18 to 24 years -- will increase rapidly after 1960 and may number almost 25 million by 1970, or 10 million more than in 1955. By 1970 this group will be made up entirely of postwar babies. The number of persons 65 years old and over is expected to increase substantially. In 1955 it numbered slightly over 14 million and by 1975 may reach at least 20½ million.

Projected changes in the population by age, for the period 1955 to 1965 are shown in the following table. (11)

Projected births and birth rates:
1955 to 1965

Period	Births (in millions)	Average annual birth rate per 1,000
	Series A	Series A
July 1955 to 1960	19.1	22.3
July 1960 to 1965	20.1	21.8

Projections of the total, male, female population
by age, July 1, 1960 and 1965, with figures for July 1, 1955 (11)

(In thousands, implies the following assumptions as to fertility -
1950-53 level continues to 1965. Figures below the line in each
column relate to persons born before July 1, 1955)

Age	1955			1960			1965		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages.....	165,248	82,004	83,244	177,840	87,957	89,883	190,296	93,896	96,400
Under 5 years.....	18,307	9,325	8,982	17,930	9,146	8,784	18,881	9,633	9,248
5 to 9 years.....	17,148	8,764	8,384	19,152	9,779	9,373	18,734	9,579	9,155
10 to 14 years.....	13,340	6,785	6,555	17,185	8,779	8,406	17,199	8,772	8,427
15 to 19 years.....	11,186	5,682	5,504	13,381	6,795	6,586	13,461	6,795	6,666
20 to 24 years.....	10,766	5,399	5,367	11,276	5,694	5,582	11,355	5,707	5,648
25 to 29 years.....	11,744	5,807	5,937	10,867	5,424	5,443	10,900	5,429	5,471
30 to 34 years.....	12,392	6,071	6,321	11,805	5,825	5,980	11,791	5,809	5,982
35 to 39 years.....	11,600	5,686	5,914	12,406	6,068	6,338	12,327	6,012	6,315
40 to 44 years.....	11,209	5,496	5,713	11,552	5,646	5,906	11,369	5,524	5,845
45 to 49 years.....	10,091	4,988	5,103	11,056	5,389	5,667	10,714	5,158	5,556
50 to 54 years.....	8,809	4,348	4,461	9,800	4,785	5,015	9,307	4,451	4,856
55 to 59 years.....	7,839	3,837	4,002	8,382	4,053	4,329	7,735	3,629	4,106
60 to 64 years.....	6,690	3,257	3,433	7,248	3,443	3,805	6,354	2,892	3,462
65 to 69 years.....	5,353	2,587	2,766	5,873	2,742	3,131	4,813	2,127	2,686
70 to 74 years.....	4,079	1,896	2,183	4,390	2,011	2,379	6,204	2,604	3,600
75 years and over..	4,695	2,076	2,619	5,537	2,378	3,159			

FARM POPULATION HIGHLY MOBILE

Almost every year since 1921 more than 2 million persons have moved to or from farms. Generally, the movement away from farms each year has been greater than the movement to farms.

In the 1920-30 decade from-farm movement averaged nearly 2 million persons per year and to-farm migration was about 1.3 million persons. In the next decade, migration away was less: About 1.5 million persons per year left farms, while the movement to farms was about the same as in the previous decade -- 1.2 million. Between 1940 and 1950, the rate of migration away from farms was greatly stepped up to 2.1 million per year moving away from farms and an average of 1.2 million moving to farms. After 1950 about 1.8 million persons left farms each year while over 600,000 moved to farms each year.

The loss through migration was offset wholly or largely by the excess of births over deaths during the decade. Since 1950 births to farm residents have averaged about 590,000 and deaths about 195,000, resulting in an average natural increase of about 395,000.

Between 1920 and 1930 the total farm population changed from 32 million to 30.5 million. In 1940 it was about the same as in 1930, but in 1950 it was about 25 million, or about $5\frac{1}{2}$ million lower than the previous decade. By 1954 the farm population was about 23 million.

MOVEMENT AFFECTED BY ECONOMIC OPPORTUNITIES

In the 1920-30 to 1940-50 decades, when opportunities for nonfarm employment were available, and when mechanization of farms was proceeding rapidly, net migration from farms was high. During the 1930-40 decade, on the other hand, when nonfarm employment opportunities were less and when progress in mechanization was somewhat retarded, many potential migrants remained on farms, and many who had migrated returned from non-farm areas.

Migration from the farm population since 1950 has occurred among all age groups of both sexes. The most striking changes have occurred among those groups in which large migrations from the farm population are usual when opportunities are available in the nonfarm economy.

The high rate of migration from farms has tended to result in a somewhat more favorable relationship of population to the farm resource base in some areas.

RAPID DECLINE SINCE 1950.

The farm population was about 22 million in 1954 as compared with 25 million in 1950. This is a continuation of the longtime downward trend which reduced the number to 13.5 percent of the total population.

For the country as a whole there was a decrease of 12.6 percent in the number of persons living on farms between 1950 and 1954. Decreases occurred in all the geographic areas, ranging from 4 percent in the Pacific area to about 21 percent in the west south central area.

The South had about half of the farm population in 1954, the West and the Northeast each had about 9 percent, and the north central region had the remaining 32 percent. (2)

OVER 5 MILLION FARM-OPERATOR HOUSEHOLDS

There were 5,341,000 farm-operator households in 1950 with a total of 21,875,000 persons making up these families, an average of about 4.1 persons per household. These households accounted for 94 percent of the total farm population, including farm laborers living on farms. (5)

Farm-operator families by degree of dependence on agriculture in 1950

	United States (000)	North (000)	South (000)	West (000)
All farm-operator families	<u>5,341</u>	<u>2,252</u>	<u>2,634</u>	<u>445</u>
	Percent	Percent	Percent	Percent
Wholly dependent.....	38.0	41.7	36.2	30.8
Partly dependent--agriculture major source.....	27.1	28.8	25.2	28.9
Partly dependent--nonagricul- ture major source.....	30.2	24.0	34.6	35.7
Not classifiable.....	4.7	5.5	4.0	4.6

The table shows that 65 percent of all farm families are primarily dependent on agriculture and 30 percent have off-farm work or nonagricultural income as the major source. The distribution of total population is almost identical with the distribution of farm operator families, indicating very little variation in average size of family among farm operators in the three classifications.

Population in Farm-Operator Households by Color and Degree of Dependence on Agriculture, U. S. and South, 1950

	United States			South		
	Total (000)	White (000)	Nonwhite (000)	Total (000)	White (000)	Nonwhite (000)
All farm-operator families	21,875	18,886	2,989	11,419	8,524	2,895
	Percent	Pct.	Pct.	Pct.	Pct.	Pct.
Wholly dependent.....	37.0	35.6	45.8	35.8	32.2	46.2
Partly dependent--agricul- ture major source.....	28.0	28.0	28.5	26.2	25.5	28.6
Partly dependent--nonagri- culture major source.....	30.8	32.2	22.2	34.5	38.7	21.9
Unclassified.....	4.2	4.2	3.5	3.5	3.6	3.3

More Than Half Have Some Off-the-Farm Income

Degree of dependence on agriculture of farm-operator families
at different income levels, 1950

<u>Family income</u> Class	Wholly dependent on agriculture	Partly dependent on agriculture		Unclassified
		Agriculture major source	Nonagricul- ture major source	
	Percent	Percent	Percent	Percent
All farms.....	38.0	27.1	30.2	4.7
Under \$1,000.....	43.9	28.4	23.2	4.5
\$1,000-\$1,999....	37.6	27.2	31.5	3.7
\$2,000- 2,999....	32.5	25.6	37.9	4.0
\$3,000- 4,999....	31.0	27.9	38.3	2.8
\$5,000- 6,999....	30.9	26.0	38.5	4.6
\$7,000- 9,999....	32.9	36.1	24.9	6.1
\$10,000 and over	40.3	31.5	23.5	4.7 (5)

"A great many of the 5,200,000 families living in rural farm areas do not square with the traditional image of 'the farmer.' A good 600,000 of them derive their incomes entirely from nonfarm occupations--e.g., from white-collar jobs in town, work in mines and canneries. Another 400,000 families have no workers at all in them; they live on pensions, rent, savings, etc. Still another 1,200,000 families are farm laborers, who receive \$2 billion a year in wages.

"The more than three million farm-operator families are still, of course, the heart of the farm market; they comprise three-fifths of all farm families. But the \$7.4 billion net cash revenue of these proprietors in 1953 represents less than half the cash income received by all farm families. The fact of the matter is that the operators' families, too, are heavily dependent on nonfarm income. Only about half of their farms are truly commercial, i.e., have cash receipts over \$5,000 a year." (7) ^{2/}

^{2/} Reprinted from "The Changing American Market" by Special Permission of the Authors, the Editors of Fortune; 1955 by Time Inc.

LOW-INCOME FARM AREAS NOT ALL LOW-INCOME FAMILIES

Not all farm families living in the areas delineated as low income and low level of living are actually low-income families. Nevertheless, the proportion of low-income farm families is so high that some conclusions can be drawn regarding the more distinctive characteristics of the low-income farm population.

The low-income areas, concentrated largely in the South and Southeast, had nearly half of the entire rural-farm population in 1950 -- 11 million out of a total of 23 million. Over four-fifths of the farms in these areas had gross sales of less than \$2,500 in 1949. Half were operated by full-time farmers under 65 years of age. (5)

POPULATION DECLINE MORE RAPID IN LOW-INCOME FARMING AREAS

The general decline in farm population which occurred during the 1940-50 decade proceeded at a somewhat faster rate in the low-income farming areas. The decline showed a steady progression from 21 percent in the medium and high-income areas of the United States to 28 percent in the areas of most serious low income.

The more rapid rate of decline was due entirely to higher outmigration rates, since the farm population in the low-income areas has slightly higher fertility ratios than in the medium and high-income areas. The migration rate was nearly 34 percent of the population at the beginning of the decade. The rate during the same decade for the rest of the farm population was 28 percent, or nearly one-sixth lower.

Heavy rates of outmigration since 1940 are being offset in part by a more rapid population growth than in the rest of the farm population. During the present decade the number of rural-farm males reaching working age is double the number who leave the labor force. Between 1950 and 1960 an estimated 1-1/4 million farm youths will reach working age while only 640,000 older farm men die or retire. In the rest of the farm population the ratio is 143 males reaching working age for every 100 who leave the labor force.

Rural-farm population, by sex and farming income areas, 1950

Level of income area	1950			Percentage change 1940-50		
	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>
Total	23,048	12,079	10,970	-23.7	-24.2	-23.2
Medium and high	12,060	6,407	5,653	-21.4	-22.2	-20.5
Low	10,988	5,671	5,317	-26.1	-26.4	-25.8
Serious	5,087	2,612	2,475	-28.0	-28.0	-28.0
Substantial	2,746	1,413	1,333	-26.5	-27.0	-26.0
Moderate	3,155	1,646	1,509	-22.4	-23.0	-21.7

(figures rounded to nearest thousand without being adjusted to group totals)

SURPLUS MANPOWER A PROBLEM

Assumed labor requirements in agriculture during the 1950-60 decade are unchanged, the replacement ratios for the low-income areas mean that in the absence of outmigration or shifts to nonfarm jobs there would be twice as many men reaching working age as the number of jobs vacated. They point up the importance of education and training of children and youth in these areas. They indicate employment opportunities must be increased to avoid an accumulation of underemployment, heavy outmigration of youth, or both. Also, in the decade 1960-70, when the babies of the 1940's will be having their 20th birthdays, the ratios will be higher. The replacement ratio for the 20-64 year age group, which was 179 in the 1940-50 decade and 168 in the 1950-60 decade, may be 185 in the 1960-70 decade.

MORE CHILDREN AND YOUTH IN LOW-INCOME FARMING AREAS

Comparison of the age and sex composition shows striking contrast when the "serious" low-income areas are compared with the middle and high-income areas. Serious low-income areas have higher proportions in each 5-year age group under age 20 for both males and females. From age 20 to 65 or 70, the serious low-income areas have deficiencies in each 5-year age group, especially marked in males.

The proportion of the aged is about the same as in the rest of the farm population. However, the proportion of children and youths under 20 is so much higher and the proportion in the productive adult ages so much lower, that the economic burden falling on the adults in the productive age groups is greater in the low-income areas than in the medium or high-income farming areas.

The proportion of nonwhite farm population is four times as high as in the remainder of the country -- 24.2 percent as compared with 5.6 percent. In the Mississippi Delta areas the proportion of nonwhites was 50 percent. On the other hand, the nonwhite population was less than 1 percent in the northern lake area and less than 3 percent in the Appalachian Mountain area and in the Cascade and Rocky Mountain areas.

Educational attainment is considerably lower in the low-income areas. In 1950, 55 percent of the adults had completed less than 8 years. The regional variations were from 20 percent in the Cascade and Rocky Mountain area to 73 percent in the Mississippi Delta area.

LOWER LEVELS OF LIVING IN LOW-INCOME FARMING AREAS

Since the farm-operator family level of living indexes were one of the criteria for the delineation of the low-income areas, it is not surprising that they are much lower than average in 1950 -- 84 as compared with 122 for the whole country and the serious areas averaged 66. (6)

TOTAL ANNUAL FAMILY INCOME

This is the most important determinant of the family level of living. The census shows that 1,366,000 farm-operator families had less than \$1,000 total cash income from all sources, farm and nonfarm, in 1949. Their average cash income was \$464 per family. Seventy-one percent of these families were in the South. There were 1,206,000 farm-operator families in the \$1,000 to \$2,000 income group and their average income for 1949 was \$1,392. Fifty-four percent of these families were in the South. Families in these income groups averaged four persons. Thirty-five percent of the families with less than \$1,000 income operated cotton farms, and another 16 percent operated other field crop farms. In the \$1,000 to \$2,000 income group 17 percent operated cotton farms, 13 percent operated other field crop farms, and 42 percent operated livestock farms. The proportion operating livestock farms in the under \$1,000 income group was 30 percent. (9)

Labor Force

The labor force includes all persons 14 years old and over, regardless of whether they are employed or unemployed. For more details about the composition of the labor force consult the original sources cited in this report. In 1955 about 68 million persons 14 years old and older were in the labor force. Of this total 70 percent were male and 30 were female workers. These figures reflect the longtime upward trend, which will continue at an accelerated rate. In 1920 there were 41 million persons in the total labor force. Estimates are that by 1960 the total will be 72.3 million and by 1975 about 89 million persons. This is an annual increase of approximately 866,000 or 1.2 percent during the remainder of the decade and some 1.2 million or 1.5 percent per year in the period 1960-70. The expected expansion over the 25 years from 1950 to 1975 will average about 1.3 percent annually.

The projected expansion reflects largely the growth of population of working age rather than changes in the rate of labor force participation. Estimates for 1950 and 1955 are that about 57 percent of the labor force was actually employed. In 1960 the percentage may drop slightly but by 1975 will still be only about 58 percent. (13)

BUSINESS AND INDUSTRY EMPLOY OVER TWO-THIRDS OF WORKERS

Today, the lives of 71.2 percent of our employed persons depend not on the soil, but on their relationship to an employing business or industry. Private wage and salary workers increased 32.9 percent from 1940 to 1950, and self-employed and unpaid family workers decreased nearly 25 percent. About 30 percent of the rural farm population is not engaged in agriculture.

MORE WOMEN WORKING

In 1950, 31.3 of all American women were in the labor force--42.5 percent of the city women, 29 percent of the rural nonfarm women, and 21.5 percent of the rural farm women. Prior to World War II, the women who worked were largely young women in their twenties and early thirties, but one of the phenomena of the present population is the number of women in their forties and fifties who are in the labor force. The tendency of married women to return to work or to take jobs for the first time after their children reach high school or college age seems to be increasing. The Census Bureau has found that the number of married women working in April 1952 was larger than at the peak of World War II. Although about one-fourth of the women who work are married, the number of married women who work is considerably smaller than the number of single women who work. In April 1952, only about 25 percent of the married women were at work, as compared with 35 percent of widowed or divorced women, and 50 percent of the single women. (9)

The habit of bringing home a paycheck of well over 30 billion dollars is not one that is to be given up easily. This is all the more reason why we shall sooner or later have to face the basic question of the reorganization of society around the industrial community, for it is industry, not agriculture, which has taken women out of the home.

MORE MARRIED WOMEN WORKING

The number of working wives continued to rise in 1955, reaching a new all-time high for April of 11.8 million. This was an increase of some 600,000 over the previous year. Although the number of married women in the population has been rising steadily during the postwar period, population growth has accounted for only a small part of the labor force expansion. The major factor has been the sharp increase in the proportion of married women who participate in the labor force and assist in the support of the family, at least on a part-time basis. The proportion of married women either employed or seeking jobs has increased each year since World War II, reaching 29½ percent in April 1955, as compared with 28 percent a year earlier and 21½ percent in 1947.

Labor force status of married women by age, 1950 and 1955

Month and year	No. of total		Percent of population in labor force				
	married women (1000s)	Total married women	Married, husband living in household				
			Age of wife (years)				
			Total	Under 35	35 to 44	45 to 64	65 and over
April 1955	11,839	29.4	27.7	26.5	33.7	29.0	7.5
March 1950	9,273	24.8	23.8	25.0	28.5	21.8	6.4

MORE MARRIED COUPLES WORKING

There has been a similar increase in couples in which both husband and wife are in the labor force. There were some 9.8 million working couples in April 1955, an increase of about 3 million since the end of World War II. Last April both husband and wife were members of the labor force in the case of 26 percent of all married couples living together; in April 1947, only 19½ percent of the couples had both members working.

Labor force status of married couples, 1947 and 1955 (thousands)

Month and Year	Married 1 Couples	Both husband and wife in labor force	
		Number of Couples	Percent of total
April 1955	37,570	9,793	26.1
April 1947	33,406	6,506	19.5

1 Includes only those in which husband and wife are members of the same household.

One effect of increasing numbers of working married women is that the unemployment of the family head is less likely today than in the past to deprive the family of all its current earnings. In April 1955, about 1.3 million family heads were unemployed, but over two-fifths of these were in families in which one or more other members (usually the wife) were employed. (9)

INCREASE MAINLY AMONG MIDDLE-AGED WOMEN

The increase in numbers of working married women over the past 2 years has been mainly among those between the ages of 45 and 64, a group which has shown a sharp and steady rise in the proportion working throughout the postwar period.

The proportion of working married women 35 to 44 years of age, however, in the extent of labor force participation has apparently leveled off during the past 2 years (at about 34 percent) in contrast to an average rise of 1 percentage point each year between 1947 and 1953.

Since 1950 the rate for younger married women (under 35 years of age) has held just about constant around 26 percent--while that for women between 45 and 64 has advanced from 22 to 29 percent. One important factor preventing an increase in the rate for younger women (and now possibly beginning to have an effect on wives in their later thirties) has been the sustained high birth rate during and after World War II. The presence of pre-school-age children, most of whom are in homes where the wife is under 40, acts as a deterrent to the mothers working. The proportion of working mothers with children under 6 was 16 percent in April 1955, as compared with about 33 percent for those married women who had no children under 6 years of age.

Labor force status of married women, by presence of children, 1955-1950 (14)

Percent in labor force	Total married husband living in house- hold	Presence or absence of children					
		No children under 6 years			Children under 6 years		
		No			No		
		Total	children 6 to 17 years	Children: 6 to 17 : years :	Total	children 6 to 17 years	Children 6 to 17 years
April 1955	27.7	33.4	32.7	34.7	16.2	15.1	17.3
March 1950	23.8	29.6	30.3	28.3	11.9	11.2	12.6

FEWER SINGLE PERSONS WORKING

The number of single women working continued to decline. This trend reflects both the reduced numbers of single women and the decreased proportion working. The drop has occurred principally among young women 18 to 24 years old; in this group, the tendency toward increased school enrollment has, to some degree, reduced the available labor supply. In April

1955, 46 percent of all single women were working, a rate still considerably higher than that for married women (29 percent), but the difference was smaller than right after World War II. In 1955, about 60 percent of the female labor force consisted of married women, 25 percent were single, and about 15 percent were widowed, divorced, or separated. The change was from 1947 figures of only 45 percent married, and about 40 percent single, with no change for the other marital status groups.

The number of single men working changed from a postwar low of 7.8 million in 1952 and 1953 to an estimated 8.3 million, partly as a result of the release of young men from the Armed Forces after the Korean conflict. The figure is still well below the 9.4 million estimated during the immediate postwar years, both because of the decline in the single population and in the rate of labor force participation.

NEARLY ALL MARRIED MEN WORK

Among married men, little change has occurred over the past 2 years, with the proportion working or seeking work at about 90 percent. This group has always had much the highest rate. In the central age groups (25 to 44 years), almost all work. Some further reduction took place among married men 65 years and over; during the past 5 years their rate has fallen from 53 to 44 percent. This downtrend is in line with the long-term tendency toward diminished work activity among older men, which has been accelerated by the expansion of private and public pension systems in recent years.

MORE MOTHERS OF YOUNG CHILDREN WORKING

The increase in numbers of working mothers of pre-school-age children was temporarily halted in April 1954, but has apparently resumed since that time. The rate among those with children under 6 leveled off at about 15 percent between April 1953 and 1954 but had picked up again--to about 16 percent--by April 1955. When first measured, in April 1948, the rate had been 11 percent. Married women with no children under 6 continued to work in increasing proportions over the past 2 years. Their rate rose from 31.4 percent between 1953 and 1955, with most of the gain occurring after April 1954.

ONLY SMALL REGIONAL DIFFERENCES

There are no very pronounced differences among married men in the various parts of the country. Among married women, the proportion working was slightly higher in the South than in the other regions, at least in non-farm areas. This difference is due to the greater proportion of nonwhite families residing in that region; work outside the home has traditionally been more common among nonwhite wives. In farm areas, working rates were lower in the South for all groups except married men, probably reflecting regional differences in the seasonal pattern in agriculture.

Labor force rates for single persons tended to be higher in the northeastern and north central areas. On the other hand, among widowed, divorced,

and separated persons, the West had the highest proportion working or looking for work. In the West a larger proportion of the total group is clustered in the central age group where rates tend to be higher.

SINGLE WOMEN WORK AS PROFESSIONALS AND CLERKS

Single women continue to be relatively more numerous than married women in the professions; mainly because marriage often interrupts the education and training necessary for such jobs. About 15 percent of the single women were professional workers as compared with only 10 percent of the working wives in April 1955. The contrast is particularly sharp among women 35 years of age and over. Only 10 percent of the working married women in that age group held professional jobs, in contrast with about 25 percent of the single women. The older women came along when women generally were less likely to continue either their education or their working careers after marriage than is the case now.

Single women were concentrated in clerical jobs partly because of employers' preference for younger women for this type of work. Far larger proportions of widowed, divorced, and separated women are in domestic service and other types of service jobs than either married or single women.

SEASONAL VARIATIONS IMPORTANT AMONG WORKING MARRIED WOMEN

There is more fluctuation in the course of a year. For example, the rate for married women fluctuated from $29\frac{1}{2}$ percent in April to as high as 31 to 32 percent in September and October when farm harvesting activities were at a peak. The low point was in February, when the rate was 26 percent. (14)

FUTURE TRENDS IN EMPLOYMENT

The labor force is expected to expand to approximately 89 million by 1975, as compared with 64 million in 1950 and an estimated 41 million in 1920. These figures imply an average annual increment of 1.3 percent during the next 25 years, a rate of growth slightly under that for the past three decades. Some acceleration in growth is expected during the decade of the 1960's. As the large crop of World War II and the early postwar babies attain working age, annual increment of 1.5 percent is expected during the succeeding decade.

The projected labor force expansion reflects largely the growth in the population of working age rather than changes in the rate of participation. Labor force participation rates in the 1950 population indicate that of the expected 24 million increase in the labor force only about 5 million can be attributed to changing rates of labor force participation. The expected overall participation rate in 1975, 58.4 percent, is not materially different from the 57.0 percent in 1950.

It is expected that women will continue to work in larger numbers, although at a somewhat decelerated pace, during the next two and one-half decades.

From an estimated 31.3 percent in 1950, the projections are for an increase in the female participation rate to 37.5 percent 25 years hence, with substantial gains expected for all age groups except the very youngest (those 14 to 19 years old).

PROPORTION OF MEN WORKERS MAY DECLINE

Some further decline is anticipated in male participation during the next 25 years. The rate for men, estimated at 83.3 percent in 1950, is expected to drop slightly to 80.6 percent by 1975. Virtually all of this reduction is expected to occur among school and college-age youths and among men 65 years old and over. With further extension anticipated in the average period of formal education, the rate for teen-age boys is expected to drop from 48.9 percent to 43.7 percent and the rate for youths 20 to 24 years from 88.6 percent to 86.9 percent during this 25-year period. The rate of participation of men 65 years old and over is expected to drop from 44.7 percent to 36.5 percent by 1975. This will reflect residence changes, such as the continued migration from farms to urban centers, and the reduction in mortality rates. Further development of comprehensive public and private pension plans aiding the trend toward earlier retirement is expected.

WOMEN WORKERS MAY REACH 40 PERCENT

These trends in labor force participation rates, along with the changing age-sex structure of the population, would have a noticeable effect on the composition of the labor force during the next 25 years. Women, both because of their expanding labor force participation and because they will continue to outnumber men in the population, will occupy an increasingly important role in the economic life of the Nation. In 1920, only 21 percent of all workers were women. By 1950, this proportion had advanced to 32 percent and is expected to rise to 38 percent by 1975. A particularly large increase is expected among women in the middle and older age groups, 45 years old and over. These women constituted only 4 percent of all workers in 1920 and $8\frac{1}{2}$ percent in 1950, but this proportion is expected to rise to 12 percent by 1975. On the other hand, men 45 years old and over will probably represent a slightly smaller proportion of the labor force in 1975 than at present. With these changes, the median age of male and female workers will be approximately the same by 1975 ($37\frac{1}{2}$ years). In 1950 and 1920, the median age of male workers exceeded that of female workers by 2 years and 7 years, respectively. (13)

THIRTY PERCENT WERE WOMEN IN 1954

In 1954, there were over $19\frac{1}{2}$ million women in the labor force, one-third of all women of working age and over 30 percent of the labor force. About one-fourth were clerical workers, one-fifth service workers, and one-tenth professionals or technicians. Half were over 37 years of age, 44 percent under 35, and one-third 45 years old and older. About 48 percent of the single women were in the labor force. Half of the working women were married and one-fourth had children under 18. (26)

Working population 14 years old and over, by marital status and sex by regions (with color for the United States and the South, urban and rural, April 1955 (Percentage of population in labor force not shown where base less than 200,000) (14)

Residence, marital status, and sex	United States			South			West		
	Total	White	Non-white:	NE	NC	Total	White	Non-white:	West
<u>Male</u>									
Total	80.9	81.3	77.5	81.1	81.9	79.2	80.2	75.4	81.9
Single	61.2	61.4	59.5	62.4	64.9	54.9	54.1	57.3	60.3
Married, wife present	90.7	90.8	90.2	91.4	91.1	90.0	90.1	89.1	90.3
Other marital status	60.7	59.5	68.7	60.6	58.7	60.9	57.7	65.7	68.2
Urban	82.0	82.3	79.6	81.7	82.7	81.0	82.2	76.4	82.7
Single	62.0	62.3	59.9	63.7	63.9	56.6	56.8	56.1	61.0
Married, wife present	91.1	91.0	91.4	91.4	91.6	90.6	90.6	90.2	90.0
Other marital status	65.3	63.5	73.3	62.9	65.5	62.8	59.8	66.5	72.8
Rural nonfarm	77.2	78.0	67.5	78.2	75.0	77.6	79.1	69.8	78.3
Single	50.9	51.1	49.0	53.6	54.1	48.3	48.1	49.0	47.4
Married, wife present	90.1	90.2	87.5	91.8	87.6	90.3	90.5	88.8	91.0
Other marital status	46.3	44.9	....	49.1	33.8	55.5	52.9	....	....
Rural farm	81.9	82.2	79.4	82.8	86.1	77.4	77.0	78.6	85.7
Single	68.5	68.3	69.4	....	75.4	58.9	56.2	66.9	80.0
Married, wife present	89.8	90.6	87.1	89.7	93.0	88.0	88.3	86.8	90.7
Other marital status	66.7	65.5	....	....	....	63.7	....	....	....
<u>Female</u>									
Total	33.4	32.6	40.9	36.3	32.7	31.1	28.7	41.3	34.0
Single	46.4	47.6	35.9	57.5	47.0	33.8	33.9	33.7	43.6
Married, husband present	27.7	27.0	38.2	27.5	27.1	28.0	26.0	39.4	28.8
Other marital status	39.6	37.8	49.9	39.7	39.3	38.1	33.3	49.6	45.0
Urban	36.9	36.1	43.6	38.5	35.1	37.1	34.5	46.6	36.9
Single	53.2	54.9	39.1	60.8	53.1	42.1	43.9	35.7	50.0
Married, husband present	29.5	28.5	38.7	28.6	27.6	32.1	29.7	44.2	30.7
Other marital status	43.9	42.0	53.0	42.6	42.0	45.7	41.1	55.6	47.5
Rural nonfarm	26.3	25.4	39.2	26.3	26.0	26.5	24.1	40.5	26.1
Single	33.0	32.6	36.4	41.7	37.6	25.5	21.6	....	29.5
Married, husband present	23.9	23.1	38.9	22.1	22.3	25.9	24.3	41.1	23.7
Other marital status	29.6	28.0	41.8	25.5	32.2	29.0	25.4	40.5	34.2
Rural farm	26.1	25.9	27.9	34.4	29.9	21.1	18.9	28.4	29.8
Single	27.9	28.8	23.0	....	28.7	22.3	21.1	25.0	....
Married, husband present	26.4	25.8	28.3	30.8	30.6	20.7	19.1	27.7	28.0
Other marital status	23.8	21.4	....	....	26.0	20.9	15.0	....	....

- 23 -

- 23 -

Working population 14 years old and over, by martial status, age and sex,
April 1955 (Percentage not shown where base is less than 200,000) (14)

Martial status and age (thousands)	Single		Married- Spouse present		Other Martial status	
	Male	Female	Male	Female	Male	Female
Total population	13,522	10,962	37,570	37,570	4,902	11,718
Number in labor force	8,276	5,087	34,064	10,423	2,976	4,643
Percent of population	61.2	46.4	90.7	27.7	60.7	39.6

Percent of population

14 to 19 years	39.4	24.6	....	19.8	....	....
14 to 17 years	29.9	15.0	....	....	....	....
18 and 19 years	65.1	52.9	....	24.5	....	....
20 to 24 years	76.5	69.6	94.5	29.4	....	55.1
25 to 29 years	88.4	78.8	98.2	24.3	77.3	58.6
30 to 34 years	90.3	84.2	99.3	27.5	83.7	62.3
35 to 44 years	82.2	81.2	98.8	33.7	83.5	64.6
45 to 54 years	88.8	79.4	97.4	33.9	85.6	64.1
55 to 64 years	83.6	69.1	88.8	21.3	72.7	45.1
65 to 74 years	33.2	37.5	51.4	8.5	39.0	16.1
75 yrs. and older	....	4.6	22.4	2.6	11.5	3.2

Educational Status and Trends

BIG INCREASE IN SCHOOL ENROLLMENT SINCE 1950

About 37 million persons 5 to 34 years old were enrolled in schools or colleges at the beginning of the 1955-56 school year. At every age level between 5 and 29 years, the proportion of persons enrolled in school has gone up since 1950. Youths of high school age today are apparently remaining in school longer than those who were of this age 5 years ago. Except for the years 1943-46, the number of high school graduates has been going up steadily since 1870. (15)

Elementary school enrollment has increased about 19 percent since 1950, and kindergarten enrollment has increased about 67 percent during the same period. Thus, the schools below the ninth grade have had to accommodate 4.5 million more children in the last 4 years.

High school enrollment, grades 9 to 12, has grown 16 percent since 1950, or nearly as rapidly as elementary school enrollment. About 60 percent of this increased enrollment was a result of population growth in the age group and about 40 percent of the increase was attributable to higher enrollment rates in 1954.

Fall college enrollment for persons under 30 years of age fell from about 2.2 million in 1950 to about 1.8 million in 1951 but has now climbed to a new high level of 2.4 million. At the high school and college levels, therefore, the Nation's schools have experienced a growth of about 1.2 million persons since 1950. (16)

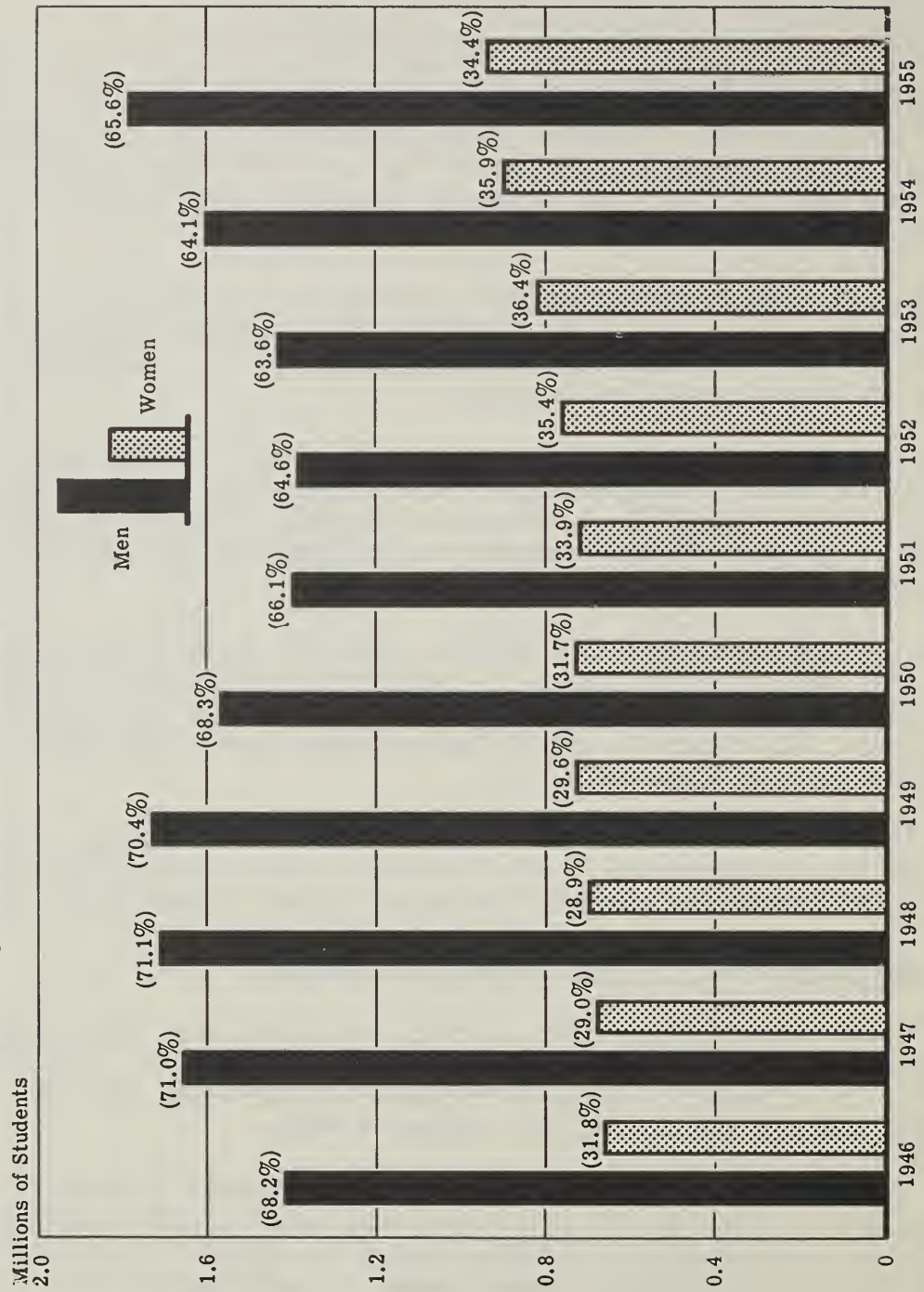
The following tables show fall school enrollments, October 1954, and percentage distributions by age, color, and sex. The accompanying charts also show that enrollments are already rising and larger increases lie ahead.

COLLEGE ENROLLMENT IN 1955 LARGEST IN HISTORY

The total college enrollment in 1955 was 2,720,929. It exceeded both previous highs, being 8.8 percent more than in 1954 and 10.7 percent more than in 1949. It climaxed 4 consecutive years of increases, with the last 2 years adding about a quarter million students each.

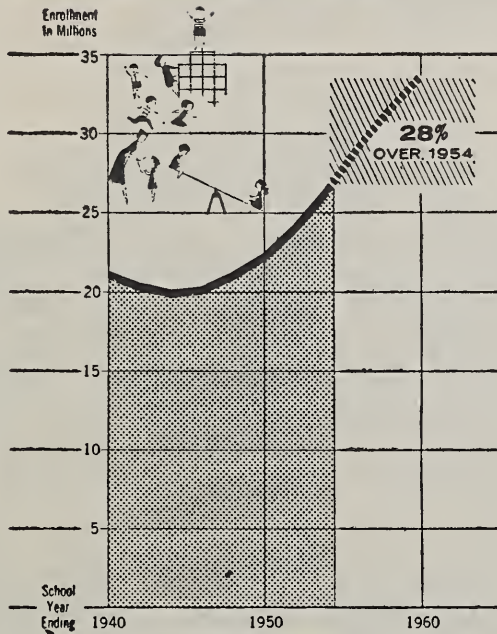
The 2-year decline beginning in 1950 that preceded this increase was caused chiefly by a falling off in veteran enrollments. The subsequent increases, aided by the presence of veterans under the Korea GI bill, are mainly the result of a combination of more normal circumstances. High school graduating classes were growing larger; and the youth coming of "college age" was expanding, owing to the upturn in our birthrate in the late 1930's. These circumstances probably will make for continued increases in college enrollments in the years ahead.

FALL ENROLLMENT OF MEN AND WOMEN IN HIGHER EDUCATIONAL INSTITUTIONS 1946-55

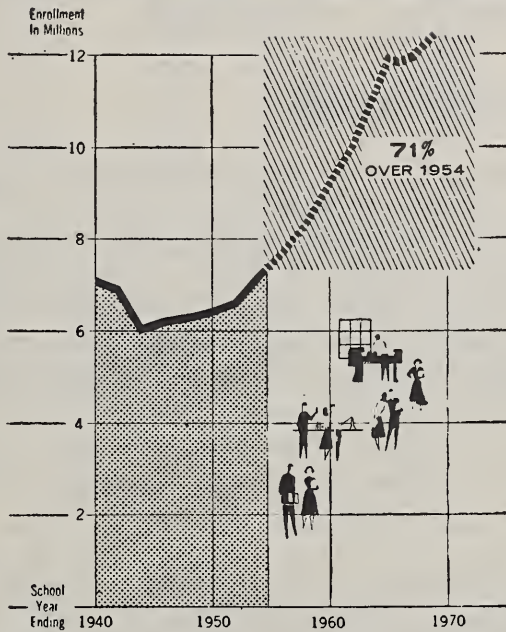


ENROLLMENTS ARE ALREADY RISING, BUT LARGER INCREASES LIE AHEAD

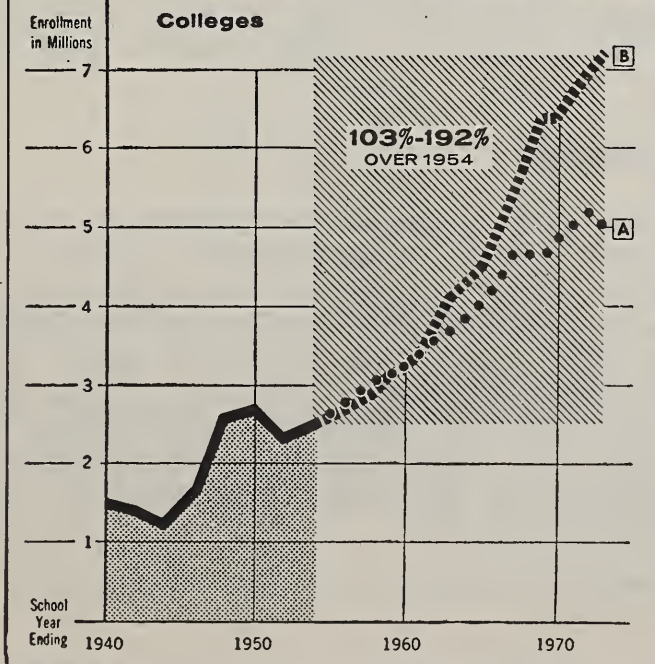
Elementary Schools
INCLUDING KINDERGARTEN



Secondary Schools



COLLEGE ENROLLMENTS ARE LIKELY TO DOUBLE WITHIN FIFTEEN YEARS



FUTURE PLIGHT of the schools is shown graphically in these two charts. Survey shows priority should go now to getting and keeping teachers.

For both men and women, college enrollment in the fall of 1955 was at an alltime high. The number of men, 1,784,000 enrolled, exceeded for the first time the record set in 1949, when veterans made up 34.9 percent of all college-grade enrollment. The 937,000 women enrolled made it fourth consecutive record year. Certainly one of the main reasons for the larger number of women is the increasing prosperity, which has made many more families able to send their daughters, as well as their sons, to college.

MUCH UNDEVELOPED TALENT

An estimated 150,000, or approximately one-half of the highest-ranking quarter, of those graduating annually from high schools do not attend college, it is believed principally for economic reasons. It is estimated that 60,000 students of equivalent ability do not even graduate from high school. The failure of large numbers of the ablest persons in our population to secure a college education is not only a serious loss to the personal development of the individual, but is also a serious loss to the nation of critically needed manpower at high levels of training. The large increase in college attendance by the age group, 18 - 21, both proportionately and in numbers has not included a significant body of undeveloped talent.

Many factors combine to prevent college attendance of enough of those of highest ability. Despite rises in the average family income, the increased tuition and fee charges, together with the rising cost of living on college campuses, have excluded many able but needy students from college. The recent years of high employment have led many young people to begin work early and thus forego college. We can assume desire is second only to money. Almost three times as many children of professional people attend college as of craftsmen and unskilled factory workers. Enrollment of women in our colleges is only about one-third that of men. Since girls usually excel as high school students we are clearly losing a large potential here. (21)

FEWER FARM CHILDREN IN SCHOOL

Variations among urban and rural areas in the proportion enrolled in school are pronounced for children 5 years of age and for youths of high school age. In the fall of 1954, only 24 percent of the rural-farm children 5 years of age were in school, as compared with 46 percent in rural nonfarm areas and 72 percent in urban areas. The principal source of the difference was the extent to which 5-year-olds were enrolled in kindergarten. At one extreme, only 11 percent of the rural-farm children of this age, and at the other extreme 54 percent of the urban children, were going to kindergarten. Furthermore, the rural areas had the lowest proportion of 5-year-olds in elementary school. (16)

Percent of population 5 to 17 years old enrolled in school
by age, urban and rural, October 1954 (16)

Age	Percent enrolled total	Urban	Rural nonfarm	Rural farm
5 years	57.7	72.1	46.1	24.3
In kindergarten	40.8	54.0	30.1	10.7
In elementary school	17.0	18.0	16.1	13.6
6 years	96.8	97.9	95.3	95.9
7 to 9 years	99.2	99.3	99.5	98.6
10 to 13 years	99.5	99.6	99.4	99.5
14 and 15 years	95.8	97.8	99.4	91.7
16 and 17 years	78.0	80.3	77.1	72.8

At the high school level, the rural-farm enrollment rates in 1954 were about 6 to 8 percentage points below those for urban areas. During the last 5 years, however, the enrollment rates for farm youth have improved markedly; they have now reached the levels that prevailed in urban areas in 1949. Similarly, those for farm children 5 years old have attained the 1949 levels for urban children.

Both white and nonwhite children of high school age have sharply advanced their enrollment rates since 1947. At ages 14 to 19, where the most progress has been accomplished in keeping the young people in school, the enrollment rates for the nonwhite population had, by 1954, reached about the same levels that those for the white population had reached by 1947. Meantime, the improvement in the enrollment rates for white persons 14 to 24 years of age has exceeded that for nonwhite persons of the same age during these 7 years. (16)

Percent of population 5 to 34 years old
enrolled in school, by age (16)
October 1954

Age	White	Nonwhite
5 to 13 years	88.4	85.5
14 to 17 years	88.3	78.8
18 and 19 years	33.6	24.0
20 to 24 years	12.0	5.8
25 to 29 years	4.0	4.8
30 to 34 years	1.5	1.4

FEWER YOUTH HIGH SCHOOL AGE IN ELEMENTARY GRADES

During the last decade the proportion of high school age youth who were still attending elementary school has sharply declined. In the middle 1940's, about 18 percent of the youths 14 to 17 years of age who were enrolled in school were in grades below the ninth; this proportion has now dropped to only about 13 percent. Corresponding gains have been recorded in the proportion in high school. It is possible that these changes reflect in part a growing tendency to promote children to a higher grade. (16)

level each year in accordance with their social and chronological development rather than their school performance, and to provide schoolwork of varying degrees of difficulty for children within a given grade. The changes may also in part be a consequence of the many forces which encourage pupils to attend school regularly.

Percentage of population 14 to 17
years old enrolled in school, by type of school (16)
October 1945 and 1954

	Type of school		
	Elementary school	High school	College or professional school
1954	12.8	85.2	1.9
1945	17.7	80.1	2.2

A survey in October 1954 showed a total of 856,000 persons 14 to 34 years old enrolled in "special" schools. Most of these schools provide trade or business instruction outside the regular school system. About 501,000 of these persons were males, and 355,000 were females. The median age of the men in special schools was 25.9 years, and that for women was 22.5 years. A survey taken in the fall of 1953 showed a total of 594,000 persons in these types of schools and the number was about the same in 1952.

Population 14 to 34 years old in special schools
by age and sex, October 1954 (16)

Age	Total	Male	Female
Total, 14 to 34 years . .	856,000	501,000	355,000
14 to 17 years	49,000	17,000	32,000
18 and 19 years	136,000	46,000	90,000
20 to 24 years	270,000	159,000	111,000
25 to 29 years	216,000	155,000	61,000
30 to 34 years	185,000	124,000	61,000
Median age years	24.5	25.9	22.5

INCREASED ENROLLMENT EXPECTED AT ALL LEVELS

Public and private schools and colleges enrolled an estimated 39,557,000 students in the fall of 1955. This was an increase over 1954 as follows: elementary, including kindergarten, through grade 8, 1,300,000; secondary, 258,000; colleges and universities, 99,000.

This was the 11th consecutive year of increased total enrollment in schools and colleges. Forecasts for the 10 years through 1964-65 indicate substantial increases for each year ahead, with a diminished rate of increase in elementary schools toward the end of the 10-year period. (16)

Projection of elementary, secondary
and higher education enrollments
1954-55 to 1964-65 (23)

Estimated total enrollment in thousands				
School year	Elementary (grades K-8)	Secondary (grades 9-12)	Higher education (Regular session)	Total
1954-55	27,738	7,422	2,740	37,900
1959-60	33,650	9,168	3,221	46,039
1964-65	35,659	11,890	3,953	51,502
Increase 1955-65:				
Number	7,921	4,468	1,213	13,602
Percent	28.6	60.2	44.3	35.9

NUMBER OF YEARS OF SCHOOLING IS RISING

The median number of school years completed for the country as a whole has risen to 9.3; 9.7 for white and 6.9 for nonwhite. This means that half of our adults 25 years of age have completed a little over a year of high school and half have not. We have only about 12 million adults over 25 who have had 1 to 3 years of college; and 25 percent of our nonwhite population has had only 1 to 4 years of elementary school education. (17) (19) (16)

For persons 25 years old and over, there was a pattern of increasing educational attainment at successively younger ages. The data indicate that the average person 65 years old or over, who had probably received most of his education about two generations ago, was an elementary school graduate, median of 8.2 years; the average person 45 to 54 years old, who probably received most of his schooling more than one generation ago, had completed 1 year of high school, median of 9 years; and the average person 25 to 34 years of age, who completed his education in the past decade, was a high school graduate, median of 12.2 years.

At the lower end of the attainment scale, it is estimated that about 1 percent of persons 25 to 29 years old had completed no years of schooling, as compared with 2 percent of those 45 to 54 years old and 6 percent of persons 65 years old and over. Persons having completed fewer than 5 years of school (often called "functional illiterates") constituted in 1950 only about 4 percent of those 25 to 29 years old, 9 percent of those 45 to 54 years old, and 21 percent of those 65 years old and over.

There was a tendency for girls in their teens to have completed about one-half grade more of school than boys in their teens. But for persons 20 to 24 years old, the difference between the medians for the two sexes was smaller.

Women 25 years old and over, as a group, also had a somewhat higher median educational attainment, 10.4 years, than men, 9.7 years. Among persons reporting on their attainment, relatively fewer women than men had completed less than 5 years of elementary school, 8 percent versus 11 percent, relatively more women than men had completed at least elementary school, 78 percent versus 74 percent, and relatively more were at least high school graduates, 40 percent versus 37 percent. Relatively fewer women than men were college graduates, however, 6 percent versus 8 percent. Among persons who had completed at least 1 year of college, about 52 out of 100 men had graduated, as compared with 43 out of 100 women.

URBAN AND RURAL DIFFERENCES

The median number of school years completed by persons 25 years old and over in October 1952 varied by urban-rural residence. Persons in urban areas had the highest median educational attainment, 10.8 years, those living in rural-nonfarm areas ranked next, 9.7 years, and persons in rural-farm areas ranked lowest, 8.5 years. Within urban areas, there was no consistent pattern of variation by size of place. (Urbanized areas of less than 250,000 persons had one of the highest medians (11.3 years).)

The lower educational attainment in rural areas may reflect, in part, a tendency for persons who remained in rural areas to have discontinued schooling at a lower grade than persons who moved from rural areas to urban areas. Also, proportionately more high schools are located in urban areas. The tendency of the larger urbanized areas to have slightly lower median educational attainments than the smaller areas probably reflects the higher proportion of foreign-born whites and of nonwhites in the big cities.

CHANGES HAVE OCCURRED SINCE 1947

Between 1947 and 1952 the median educational attainment of persons 14 to 24 years old increased less than that of persons over 25. For the population 25 years and over, as a group, the median rose during the 5-year period from about 9 years in 1947 to about 10.1 years in 1952. Actually, this rise took place mainly at ages over 30. The most striking gain appears in estimates for the age group 35 to 44 years, where the median rose by about 1.5 years. The improvement in the medians for these age groups reflects, in part, the differences between relatively poor educational opportunities during the depression of the 1930's and relatively good educational opportunities during the prosperous 1940's. The rise at the older ages reflects progressive expansion of education in the past; as persons with less schooling die or pass on to older ages, they are followed by persons who have had the advantage of more schooling.

Median years of school completed
by population 25 years old and over, by sex,
urban (by size of place) and rural, October 1952 (17)

Area and sex	Median school years completed
<u>Total, 25 years old and over</u>	
United States	10.1
Urban	10.8
In urbanized areas	10.8
Areas of 1,000,000 or more	10.6
Areas of 250,000 to 1,000,000	11.0
Areas of less than 250,000	11.3
Other urban areas	10.6
Places of 10,000 or more	10.7
Places of 2,500 to 10,000	10.6
Rural nonfarm	9.7
Rural farm	8.5
<u>Male, 25 years old and over</u>	
United States	9.7
Urban	10.6
In urbanized areas	10.8
Areas of 1,000,000 or more	10.6
Areas of 250,000 to 1,000,000	10.9
Areas of less than 250,000	11.0
Other urban areas	10.3
Places of 10,000 or more	10.3
Places of 2,500 to 10,000	10.3
Rural nonfarm	9.2
Rural farm	8.3
<u>Female, 25 years old and over</u>	
United States	10.4
Urban	10.9
In urbanized areas	10.9
Areas of 1,000,000 or more	10.5
Areas of 250,000 to 1,000,000	11.1
Areas of less than 250,000	11.6
Other urban areas	11.0
Places of 10,000 or more	11.0
Places of 2,500 to 10,000	10.8
Rural nonfarm	10.2
Rural farm	8.7

ONE PERSON IN 20 OVER 14 YEARS OF AGE IS ILLITERATE

Approximately 2.8 million persons 14 years old and over in 1952 were functionally illiterate, that is, were unable to read and write either in English or in any other language. The illiterates constituted 2.5 percent of all persons 14 years old and over.

There were proportionately fewer illiterates among females than males in 1952, and this pattern tended to prevail in the various age and residence groups. Approximately 3 percent of all males 14 years old and over were illiterate, as compared with 2 percent of females.

ILLITERACY HIGHEST AMONG FARM PEOPLE

The rate of illiteracy among the farm population was 6 percent, about three times as great as among the nonfarm population where it was 2 percent. Many factors could be cited as probable reasons for this wide variation. It is likely that the general decrease in the farm population involved the movement from farms of persons who on the average had attained a higher educational level than those who remained. Also, because of the family work patterns many farm children may have dropped out of school to work too early to have learned to read and write. These factors plus the inaccessibility of schools in some rural areas, probably account for the difference in illiteracy rates in the residence groups.

In urban areas the rate of illiteracy was approximately the same for males and females. Among farm persons the proportion of illiterate males was almost twice that for females -- 7 percent as compared with 4 percent.
(17) (19) (16)

TEN PERCENT ILLITERACY AMONG NONWHITES

About 10 out of every 100 nonwhite persons in 1952 were illiterate as compared with 2 out of every 100 white persons. The illiteracy rates for the nonwhite population ranged from 4 percent for persons 14 to 24 years old to 33 percent for persons 65 years old and over. These facts indicate both the past improvement and the potential future improvement in the overall illiteracy rate for nonwhites. Yet at present a wide difference still exists between the illiteracy rates of whites and nonwhites. Furthermore, the difference between the illiteracy rates of nonwhite males and females tended to be greater, age for age, than that between white males and females. (24)

Family

During the first half of the decade 1945-55, the annual increase in the number of households averaged about 850,000. There were an estimated 47.8 million households in April 1955 as compared with 43.6 million in March 1950. This increase was not shared uniformly. Urban and rural-nonfarm households increased by about a million a year during the period 1950 to 1955, whereas the rural-farm households showed a decline of close to 150,000 a year. In 1950, there were 37.3 million urban and rural-nonfarm households and 6.3 million rural-farm households. However, there were 42.2 million nonfarm households and 5.5 million farm households in April 1955.

The count of households is equivalent to the number of occupied dwelling units. The increase in nonfarm households for a given period, however, may differ considerably from the number of nonfarm housing starts, because two different types of measure are involved. Demolitions, conversions, changes in the supply of vacant housing, shifts between farm and nonfarm usage, and differences in definition affect the relationship between the increase in nonfarm households and the number of nonfarm housing starts.

Of all households, 67 percent were in urban areas, 21 percent in rural-nonfarm areas, and 12 percent on rural farms. Of all rural-farm households, 84 percent were husband-wife households; the corresponding proportion for urban areas was only 73 percent. On the other hand, 20 percent of the urban households had a female head, as compared with only 8 percent of the rural-farm households. (18)

FAMILY SIZE HAS DECREASED SINCE 1890

For many decades the number of households has been increasing much faster than the population, while the average size of the household has steadily declined. This has been true for each decade since 1890. In the entire 60-year period population increased 139 percent and the number of households, 237 percent. Average household size, as roughly measured by population per household, decreased from 4.9 persons in 1890 to 3.5 in 1950. During the 3 years from 1950 to 1953 the number of households increased by an average of 950,000 a year, while the average size of households declined further to 3.3 persons per household.

The decline in average household size results from a marked increase in the proportion of 1- and 2-person households during the past 2 decades, a smaller gain in the percentage of 3-person establishments, and a sharp drop in the proportion of 5-person and larger households. Households consisting of 4 persons--typically 2 parents and 2 children--have remained almost unchanged since 1930, at close to 18 percent of the total.

These trends reflect a number of significant influences affecting family size and formation. Among the most important are the long-term downward trend in the median age at first marriage, which has contributed to a steady increase in the number and proportion of newlywed couples; a general decline in the birthrate until the 1940's, especially for the higher birth orders; and a sharp upturn in marriage rates during the late 1940's, which brought a rise in the proportion of two-person households.

MORE ONE-PERSON HOUSEHOLDS TODAY

The increase in the percentage of one-person households during the 20-year period emphasizes the importance of factors other than marriage and birthrates in determining household size. Increasing numbers of young people seek jobs away from their home communities, and even when they do not, the long-run rise of incomes has enabled older children to leave home and set up their own establishments. Old-age pensions and retirement plans are more prevalent today, so that more old people can live alone if they choose, rather than move in with younger members of the family.

The sharp decline in the relative importance of the very large household also probably reflects both social and economic influences. In 1930 nearly 19 percent of all households consisted of six or more persons; by 1950 only 11 percent were of this size. By April 1953 the percentage had declined to less than 10. These are large families--normally with four or more children and often with parents and married children living in the same dwelling. In spite of the sharp rise in birthrates since World War II, there is no evidence of a return to the very-large-family pattern, and as pointed out above, economic changes today make it less necessary for families to "double up" or for older children to live at home.

The abnormally high marriage rate during the last half of the war decade makes it very probable that the rate of family formation will slow down somewhat in the 1950's. For this reason, primary families are expected to increase from 38.7 million in 1950 to 44 million in 1960, or by 13.7 percent during the decade. The gain from 1940 to 1950 was 22.5 percent.

With continued prosperity, the number of one-person households and those made up of two or more unrelated individuals should continue to increase more rapidly than the population. It is estimated that they will increase to 7 million by 1960, and that this rise will be accompanied by a slight increase in the number of lodgers and resident employees to 7 million. (4)

SMALL FAMILIES THE PATTERN

When the first census was taken, the average family contained 5.7 persons. Today, the average family contains 3.6 persons. There are only three States in the country that average more than two children per family--North Carolina, South Carolina, and Mississippi, where the average is 4.1 persons per family. The Pacific States--Washington, Oregon, and California--have the smallest families in the country, averaging 3.3 persons. Rural families

are somewhat larger than city families, and city families are smaller than suburban families. The average rural family has 4.13 persons, a city family 3.44 persons.

What does this mean--the fact of increasingly smaller families? It is very likely that the small family is here to stay, even though we have recently gone through a 12-year boom in birthrates. The small family, living apart as a separate unit, is a consuming unit, and it is a group in which quality is becoming more important than quantity.

Gone from the family are the aunts, uncles, grandparents, and assorted "kissin' kin" living with the family. The babysitter takes the place of collateral relatives. And we buy the services of the babysitter, just as we buy, instead of produce at home, most of the other goods and services which it was once the function of the family to produce or perform. Today's small family is a consuming unit--THE consuming unit, while families of the past were producing units.

As the family becomes smaller in size, the relationships among members become limited to fewer persons, and are thus intensified. If the family experience involves difficulties among the 3.6 persons, the impact upon each individual will be more intense than if there were many relatives around to share the problem and help in the solution.

MODERN FAMILIES ARE MOBILE

The modern family--rural and urban--moves about. It is estimated that some 30 million families changed residence during World War II. About 20 percent of the United States population changed residence from 1949 to 1950. The most frequent movers are the suburbanites. It is interesting to note, however, that a small percentage more of our rural population moved from 1949 to 1950 than city people. There are of course regional and local differences in mobility. The most mobile populations in 1949-50 were in the West and the South. (9)

MORE WOMEN THAN MEN

The number of married persons is at a record level. Forty years ago, 54.2 percent of our males and 57.1 percent of our females were married. Today, 67.4 percent of our males and 65.3 percent of our females are married. There are fewer males in our population. In 1850, there were 104.3 males for every 100 females in the country. Today this ratio has declined to 98.6 males for every 100 females. There are more single women eligible for marriage than there are single men. While we have some 3.3 million widowed or divorced men, we have some 8 million widowed or divorced women, 6 million of whom are in urban areas. There are more than three widows to every widower. In the over 60 group, this ratio is even higher. (4)

Households, Married Couples, and Families
1950 to 1960 (20)

Date and series	Number of family units			Average annual increase since preceding date		
	Households	Married couples	Families	Households	Married couples	Families
	(000 omitted)			(000 omitted)		
March 1950	43,468	35,925	39,193	1,485	657	716
April 1951	44,564	35,998	39,322	1,011	67	581
April 1952	45,464	36,510	40,442	900	512	620
July 1955:						
Medium series	47,701	37,798	42,240	697	401	560
July 1960:						
Medium series	50,822	39,886	44,616	624	418	475

FAMILIES EXPECTED TO INCREASE

If the medium series of projections prove most nearly accurate, there will be an average increase in the number of households of about 700,000 per year from 1952 to 1955 and of about 625,000 from 1955 to 1960. According to this series, the number of households will rise from 45.5 million in April 1952 to 47.7 million in July 1955 and to 50.8 million in July 1960.

For many decades the number of households has grown more rapidly than the population because the average size of household has been declining. The main reason for the decline in household size has been the gradual fall in the birthrate up to about 1933. In addition, the length of time that parents survive after their children have left home has increased; hence the proportion of households consisting of only 1 or 2 older persons has increased.

The average size of household in 1890 was 4.93 persons, but by 1940 it had dropped to 3.67 persons. During the 1940's extraordinary economic and psychological conditions spurred the marriage and birthrates to high levels and stimulated many family groups and unattached persons to seek separate living quarters in preference to sharing the living quarters of others. As a net consequence, the average size of household fell still further by 1950 to 3.39 persons.

In 1960, however, the average size of household may not differ much from that of 1950. The percentage increase in population between 1950 and 1960 is expected to be only slightly smaller than the percentage increase in the number of households. According to projections, the average household

would consist of about 3.26 persons in 1960. Thus, the indicated average size of households in 1960 implies little change from the average size in 1950. (20)

AGE DISTRIBUTION IN FAMILIES IS CHANGING

We are an aging population. The median age in the country is 30.2 years. More than 22 percent of our population is over 50 years of age. The older population is in the urban areas and urban sections of the country. It is estimated that some 3 million persons live in hotels, rooming houses, and other places not exactly family households. About the same proportion-- 2 percent of the population--was disclosed in the census of 1940. Most of these people are elderly. (4)

Widely varying rates of change between 1950 and 1960 can be expected for different age groups, as well as marked variations from the changes that occurred in the 1940's.

Because of the expected moderate decline in the birthrate after 1953, for example, it seems likely that there will be only a slight increase in the number of children under 5 years of age in 1960, as compared with 1950. The 5-to-9 and 10-to-14 age groups of 1960, on the other hand, will be made up of the children born during the prolific late 1940's and early 1950's. These groups are therefore sure to increase much more rapidly than they did before. The number of 15- to 19-year-olds actually declined by 13.4 percent from 1940 to 1950, reflecting the low birthrates of the 1930's. With the rise of marriages and births in the 1940's, the size of this group can be expected to increase substantially by 1960.

There will probably be a sharp drop in the number in the "marrying ages" of 20 to 29 between 1950 and 1960, however. Only 22.2 million of the population will be in this age group in 1960, as compared with 23.9 million in 1950 and 22.7 million in 1940. Thus, these fertile ages will show an actual decline in numbers over a 20-year period when total population will have increased 33.5 percent. The 30-to-34 group will show virtually no change in size during the 1950's. The failure of the 20-to-34 age groups to grow in number between 1950 and 1960 reflects the subnormal birthrates during 1936-40.

The middle and upper age groups, on the whole, will probably grow somewhat more rapidly during the 1950's than the total population, reflecting the gradual "aging" of the population. The rise in the median age, however, has been markedly slowed since 1940 by the sharp increase in the number of children. The median age is expected to rise to 31 years by 1960, or about 1 year above the 1950 median.

The number of persons over 65 will increase by an estimated 27 percent between 1950 and 1960, although both the actual increase and the percentage gain will be smaller than in the preceding decade. However, this upper age group will include 9 percent of the population in 1960, as compared with 8 percent in 1950.

The number of people in the working age groups, 15 to 64, is expected to increase by 9.3 million; the increase in the "dependent" groups, under 15 and over 65, will be 15.1 million. The ratio of "workers" to "dependents", which has been rising for more than a century, was sharply reversed after 1940. It dropped from 2.1 to 1 in 1940, to 1.8 in 1950, and will apparently decline further to about 1.6 to 1 in 1960. (4)

Estimated increase in population and family units
1930-60 (20)

	Percentage increase during period		
	1930-40	1940-50	1950-60
Population, all ages	7.2	14.5	13.6
Under 10 years old	-11.7	38.3	2.4
10 to 19 years old	2.2	-9.7	40.9
20 to 34 years old	10.4	7.0	-2.8
35 to 54 years old	12.0	14.6	15.5
55 years old and over	30.3	30.5	22.8
Number of households, total	16.9	24.4	16.9
Husband-wife households	12.4	27.7	13.4
Other households with male head	26.2	-3.4	12.0
Households with female head	38.9	24.1	37.4
Number of married couples	13.3	26.0	11.0
Number of families	15.0	21.8	13.8

Estimated increases in population by age groups indicate that, whereas the overall average number of persons per household may change little during the 1950's, the age composition of household members will change sharply. The number of children under 10 years old in 1960 may be larger or smaller than in 1950. At the same time, teen-age children are certain to increase sharply.

Young adults in the age group 20 to 34 years--when most persons form new households--will very likely decline in number between 1950 and 1960. If household growth depended entirely on population growth in this age group, it would not be surprising to find actual losses in the number of households during the 1950's. The fact that substantial gains in the number of households, rather than losses, are indicated for the 1950's may be attributed to (1) the more-than-compensating gains in the population above age 35 expected in the population projections, and (2) the expected increase in proportion of adults of all ages who will be heads of households.

Households with a woman as head may be expected to increase quite rapidly. A substantial majority of these heads of households are past middle age. Since the longevity of women is expected to increase more rapidly than that of men, and since a growing proportion of older women is expected to maintain separate homes, the number of female heads of households is expected to increase rapidly. (20)

BIRTH RATES HAVE CHANGED

The 1950 birthrate of 24 per thousand was about 10 percent below the post-war peak, but the rate rose to almost 25 per thousand in 1951 and continued at this level during 1952 and 1953. In the first quarter of 1954 it dropped to less than 24.

It is still too early to know to what extent this recent "baby boom" is due to such transitory factors as the abnormal increase in the marriage rate and the drop in the average age of marriage, or perhaps to a tendency to have children closer together, and to what extent it may reflect a fundamental change in the ideas of married couples about family size.

Inasmuch as the younger women are responsible for most of the first and second births, it is not surprising to find these lower orders of birth showing the largest gains. The 1947 birthrates of 48 per thousand for first-born children and 31 per thousand for second-born were more than one-third above the 1921 rates and close to twice the depression low points reached in 1933. First and second births accounted for 70 percent of the babies born in 1947, as compared with 53 percent in 1921.

The rates for second and third births in both 1950 and 1951 were above the 1947 level and well above the 1921 rate. Evidently many of the war brides are having 2 or 3 children and having them close together.

If recent tendencies may be taken as a clue to the future, it appears likely that family size will be more uniform, with the typical family having 2 or 3 children born fairly close together and early in marriage. This outlook would of course be radically altered by a severe depression. Such an economic calamity would, as in the 1930's, lead not only to a postponement of many marriages but, with birth control as widely practiced as it is today, to a deferment of births as well.

NEARLY 40 PERCENT OF AMERICAN WOMEN WORK

A century ago the married woman with paid employment was exceptional. In 1900, 6 percent, and in 1940, 15 percent of all married women were estimated to have employment outside the home. By the early 1950's the employment of married women had so increased that 1 wife out of 4 either had or was seeking a job. (4)

Today 37.7 percent of all American women are in the labor force--42.5 percent of the city women, 29 percent of the rural nonfarm women, and 21.5 percent of the rural farm women. Prior to World War II, the women who worked were largely young women in their twenties and early thirties, but one of the phenomena of the present population is the number of women in their forties and fifties who are in the labor force. The tendency of married women to return to work, to take jobs for the first time after their children reach high school or college age seems to be increasing. The number of married women working in April 1952 was larger than at the peak of World War II. Although about one-fourth of the women who work are married, the number of married women who work is considerably smaller than the number of single women who work. In April 1952, only about 25 percent of the married women were at work, as compared with 35 percent of widowed or divorced women, and 50 percent of the single women.

The habit of bringing home a paycheck of well over 30 billion dollars is not one that is to be given up easily. This is all the more reason why we shall sooner or later have to face the basic question of the reorganization of society around the industrial community, for it is industry, not agriculture, which has taken women out of the home. (9)

OLDER MARRIED WOMEN MADE BIGGEST INCREASE

While more married women are now working than ever before, the biggest change has been in the increase in working wives between the ages of 45 and 65, the so-called older women workers.

Just 15 years ago, only 10 percent of the wives in this older group had jobs, or were actively seeking work. Today the figure has climbed to nearly 30 percent, representing a near-spectacular threefold increase.

Most of these wives continued to work after the war's end. Married women over 45 worked in ever-growing numbers, to the point where record after record was set with each succeeding year.

MARRIED WOMEN WANT A HIGHER FAMILY STANDARD OF LIVING

The primary reason more married women are working is undoubtedly to increase family income, either on a temporary or a permanent basis. Many women workers frankly want their families to enjoy a higher standard of living, and that is why they are working. Many families with better-than-average incomes have both husbands and wives working. Often it was the wife's income that raised the family income to those welcome heights.

Women often work in order to reach some special goal. It might be for a child's education at college or at a professional school. Women work to help pay the mortgage on their homes, for remodeling, to help buy a new house, to invest in an annuity or a retirement income policy, or to make some other provision for future family income.

There are other reasons for seeking work, especially for the wife over 45. If she has children, they are well along in school, for the most part, or have married and left home. Her job of raising her family having largely ended, she often finds an outlet for her talents and abilities in work outside the home. Also, there are wives for whom housework has little appeal, and who look for a job after the children are grown.

Whatever personal reasons they may have for working, wives over 45 make a definite and valuable contribution to the economic strength of the country in terms of the services they give and the things they help to produce, and the millions of dollars they earn and spend each year. This group makes up 17 percent of all women workers--a sizable proportion from any point of view. Just imagine what would happen if they were all to quit their jobs at the same time. (8)

A third of all women workers are single, almost half are married with husbands present, less than a fifth are widowed or divorced, and a very small proportion married with husbands absent.

Shifts in the country's general economy tend to change notably the occupational picture. However, three occupations long have been and still remain in the upper ranks in the employment of women--general household work, teaching, and selling, chiefly in stores. This is shown in the following list of the 10 occupations that have employed the largest number of women in every decade since 1900.

FEWER WOMEN WORK IN SERVICE OCCUPATIONS

In recent decades clerical work has been outstanding for women, and beginning in 1920 three clerical occupations have been among the largest for women. In the earlier years, in contrast, certain service occupations such as laundress, housekeeper, and several groups of farm workers, were in this upper list. Later these declined in importance, and in 1940 and 1950 waitress was the only service occupation among the largest 10, except for household work.

Ten largest occupations of women, 1900-1950 (25)

	1950	1940	1930	1920	1910	1900
General household workers	x	x	x	x	x	x
Teachers	x	x	x	x	x	x
Saleswomen (including "clerks" in stores)	x	x	x	x	x	x
Stenographers, typists, secretaries	x	x	x	x	x	
General clerical workers	x	x	x	x		
Bookkeepers	x	x	x	x		
Operatives - apparel	x	x	x			
Nurses (professional)	x	x				
Waitresses	x	x				
Telephone operators	x					
Housekeepers (private households)		x	x	x	x	x
Laundresses			x	x	x	x
Farmworkers (unpaid family or home farm)			x	x	x	x
Dressmakers, seamstresses				x	x	x
Farmers					x	x
Operatives - textile mills					x	x
Farmworkers (wage workers)						x

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Program Projection Series

Report No. 3 - FAMILY LIVING

3a - Family Living Costs

3b - Food and Nutrition

3c - Clothing

3d - Housing, Equipment, and Furnishing

3e - Child Development and Family Life

3f - Health

DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.



Summary of Family Living Reports

GENERAL

Farm population is expected to continue to decline. The percentage of the population living in rural nonfarm and suburban areas will continue to increase. Marriages are occurring at an earlier age with nearly twice as many births as during the depression years. There is an increasing proportion of individuals under 15 years of age and 65 years and older.

In April 1955, 29.5 percent of married women were employed or seeking employment. This indicates a continuing increase in the number of two-income families. Working mothers of children under 6 increased from 15 to 16 percent between April 1954 and April 1955.

Shorter workweeks and changing attitudes toward recreation and leisure activities are changing family living patterns. There is greatly increased interest in family do-it-yourself projects.

FAMILY INCOME AND COSTS

Per capita income for family living is assumed to increase to approximately \$1,725 (1954 dollars) by 1960 as compared with \$1,547 in 1954.

Families in the low-income group may enjoy a higher percentage of increased income than families in the medium-to high-income groups.

FOOD AND NUTRITION

Food will continue to take approximately one-quarter of the family income.

With higher real incomes, particularly in the low- and middle-income brackets, diets are expected to be upgraded. The effect of this upgrading of diets will be expressed in further per capita increases in the consumption of high protein foods and fruits and vegetables. Per capita consumption of starchy foods is expected to continue to decline.

The amount of food consumed per capita measured in pounds has been remarkably constant over a period for which national data are available. When more of one food is consumed, we eat less of another. Only a small percentage of Americans eat less than they need and can consume more food.

Poorly fed Americans may be found in any economic level. The best-fed segment of our population, based on age groups, consists of infants and young children. The poorest fed are the teen-age girls and the homemakers of childbearing age.

The amount of food consumed per capita generally decreases with the degree of urbanization. Both farm and nonfarm families will continue to buy more food which is ready for the table.

CLOTHING

Of the three essentials of life--food, housing, and clothing--clothing expenditures are the most flexible and therefore are more sensitive to changes in the consumer's economic status and subject to greater competition from other consumer goods and services.

Growth of middle-income group, mobility of population, central heating and air conditioning, women working, and increased leisure are factors that have influenced changes in clothing.

The trend is toward more casual dress and more items of clothing selected for comfort and suitability rather than for status value.

Clothing takes about 8 percent of the consumer dollar at present but is expected to return to traditional 10 percent.

Mass production has resulted in good quality, well-designed clothing at relatively low price.

Home sewing at present tends to be less an economic necessity than a creative outlet.

Three-fourths of farm families own sewing machines. More than one-half of all women and girls who sew make clothing and household items.

New developments in yarn and fabric construction plus new dyes and finishing processes tend to decrease clothing losses due to fading and shrinkage. Consumers will need to be alert to continued technological changes.

HOUSING

Farm families spend nearly as much for dwellings as for farm service buildings. In 1956 remodeling and repair are emphasized more than new building. This is probably due to fewer new families. About 1960 another housing boom is expected. Even though 94 percent of the homes are electrified, many still lack hot and cold running water and bath. Many homes are inadequately wired to carry the present load of electrical equipment.

Most of the expenditures for household equipment and furnishing will be for replacement.

HEALTH

Since 1900 life expectancy has increased from 48 years to 68 years for men and 72 years for women. Infant death rates are the lowest in history. Death rates from infectious diseases have greatly decreased, while those for chronic diseases common to aging have more than doubled.

About 14,000 farm residents die from accidents each year. In addition, approximately 1,200,000 persons are seriously injured annually. The annual economic loss to the country from farm accidents is estimated to be about \$1,500,000,000.

In 1954 accidents were the leading cause of death among children under 14. Traffic fatalities are at an alltime high.

April 1956

Program Projection Report No. 3a

Family Living Costs

Total national consumption and per capita consumption projections can be valuable tools to professional workers and to families. Spending by families in the past is an indication of what may be expected in the future. A rising economy will provide increased income, which will be divided among the various classifications of goods consumed by families, with some slight shifts in the percentages going to the various classifications.

The income a family expects to receive may be used as a guide in a family spending plan. Expected income may also be used as a base for determining justifiable credit. With some indication of the average expected income per capita, families can project their own situations. They will need to consider carefully where they are now in relation to the average, and what changes 4 years will probably bring in terms of family size and position in the family life cycle.

Families in the low income group may enjoy a slightly higher percentage of increased income than families in medium to high income groups if the same number of family workers is employed. A change in the stage of the family life cycle may cause income to be reduced for other families.

Per capita income projection along with population projection can aid communities and larger areas in planning educational, recreational, and business needs.

DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Total national consumption expenditures for 1930-40-50 ^{1/} and projection for 1960 ^{2/} in 1954 dollars

Item	Year			
	1930	1940	1950	1960
	Dollars	Dollars	Dollars	Dollars
	(in millions)	(in millions)	(in millions)	(in millions)
Total consumption expenditure and projection.....	116,390	138,089	217,260	288,214
Food, liquor and tobacco.....	33,956	43,314	73,264	97,705
Food; nonalcoholic beverages....	(29,046)	(32,755)	(59,307)	(78,106)
Alcohol.....	(2,573)	(6,965)	(9,046)	(12,393)
Tobacco; smoking products.....	(2,338)	(3,593)	(4,911)	(7,205)
Clothing, accessories, and personal care.....	16,722	18,678	27,875	38,332
Clothing and accessories.....	(12,826)	(11,825)	(21,270)	(29,253)
Jewelry and watches.....	(825)	(778)	(1,477)	(2,162)
Cleaning, repairing, maintaining: Personal care.....	(1,396)	(1,520)	(2,563)	(3,603)
	(1,676)	(2,122)	(2,564)	(3,314)
Housing and utilities.....	22,649	24,248	30,357	39,774
Household equipment and operations.	17,738	21,252	32,454	42,079
Consumer transportation.....	10,545	13,609	26,295	34,009
Medical care and insurance.....	4,679	5,895	9,426	12,681
Recreation.....	5,679	6,265	11,403	14,987
Education (private).....	1,850	2,158	3,294	4,900
Religion.....	1,433	1,269	1,256	1,441
Welfare (private).....	896	864	1,006	1,441
Occupation: miscellaneous expense..	243	537	630	865

^{1/} 1930-40-50 data based on estimates in AMERICA'S NEEDS AND RESOURCES by Frederic Dewhurst and Associates, the 20th Century Fund, adjusted to 1954 Dollars (1954 Consumer Price Index=100, Bureau of Labor Statistics)

^{2/} Based on Basic Assumption of \$1725 per capita disposable income (1954 Dollars)

Per capita consumption and percent of total expenditure for 1930-40-50¹/and projection for 1960²/in 1954 dollars

Item	Year									
	1930	1940	1950	1960	1930	1940	1950	1960	1930	1960
	Dollars	Dollars	Dollars	Dollars	Percent	Percent	Percent	Percent	Percent	Percent
Total consumption expenditures and projection.....	948	1,049	1,448	1,621	:100	:100	:100	:100	:100	:100
Food, liquor, and tobacco.....	277	329	488	550	29.17	31.37	33.72	33.9	33.72	33.9
Food and nonalcoholic beverages:	(237)	(249)	(395)	(439)	(24.95)	(23.72)	(27.30)	(27.1)	(27.30)	(27.1)
Alcohol.....	(21)	(53)	(60)	(70)	(2.21)	(5.05)	(4.16)	(4.3)	(4.16)	(4.3)
Tobacco and smoking products..	(19)	(27)	(33)	(41)	(2.01)	(2.60)	(2.26)	(2.5)	(2.26)	(2.5)
Clothing, accessories, and personal care.....	136	142	186	216	14.37	13.53	12.83	13.3	12.83	13.3
Clothing and accessories	(104)	(108)	(119)	(165)	(11.02)	(10.33)	(9.79)	(10.15)	(9.79)	(10.15)
Jewelry and watches.....	(7)	(6)	(10)	(12)	(.71)	(.56)	(.68)	(.75)	(.68)	(.75)
Cleaning, repairing, maintaining:	(11)	(12)	(17)	(20)	(1.20)	(1.10)	(1.18)	(1.25)	(1.18)	(1.25)
Personal care.....	(14)	(16)	(17)	(19)	(1.44)	(1.54)	(1.18)	(1.15)	(1.18)	(1.15)
Housing and utilities.....	184	184	202	223	19.46	17.56	13.97	13.8	13.97	13.8
Household equipment and operations.....	144	162	216	237	15.24	15.40	14.94	14.6	14.94	14.6
Consumer transportation.....	86	103	175	191	9.06	9.85	12.10	11.8	12.10	11.8
Medical care and insurance.....	38	45	63	71	4.02	4.27	4.34	4.4	4.34	4.4
Recreation.....	46	47	76	84	4.88	4.54	5.25	5.2	5.25	5.2
Education (private).....	15	17	22	28	1.59	1.56	1.52	1.7	1.52	1.7
Religion.....	12	10	8	8	1.23	.92	.58	.5	.58	.5
Welfare (private).....	7	6	7	8	.77	.62	.46	.5	.46	.5
Occupation and miscellaneous expense.....	2	4	4	5	.21	.38	.29	.3	.29	.3

1/ 1930-40-50 data based on estimates in AMERICA'S NEEDS AND RESOURCES by Frederic Dewhurst and Associates, the 20th Century Fund, adjusted to 1954 Dollars (1954 Consumer Price Index=100, Bureau of Labor Statistics)

2/ Based on Basic Assumption of \$1725 per capita disposable income (1954 Dollars)

(over)

COMMITTEE:

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Program Projection Report No. 3b

Food and Nutrition

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Food and Nutrition

SITUATION

Expenditures

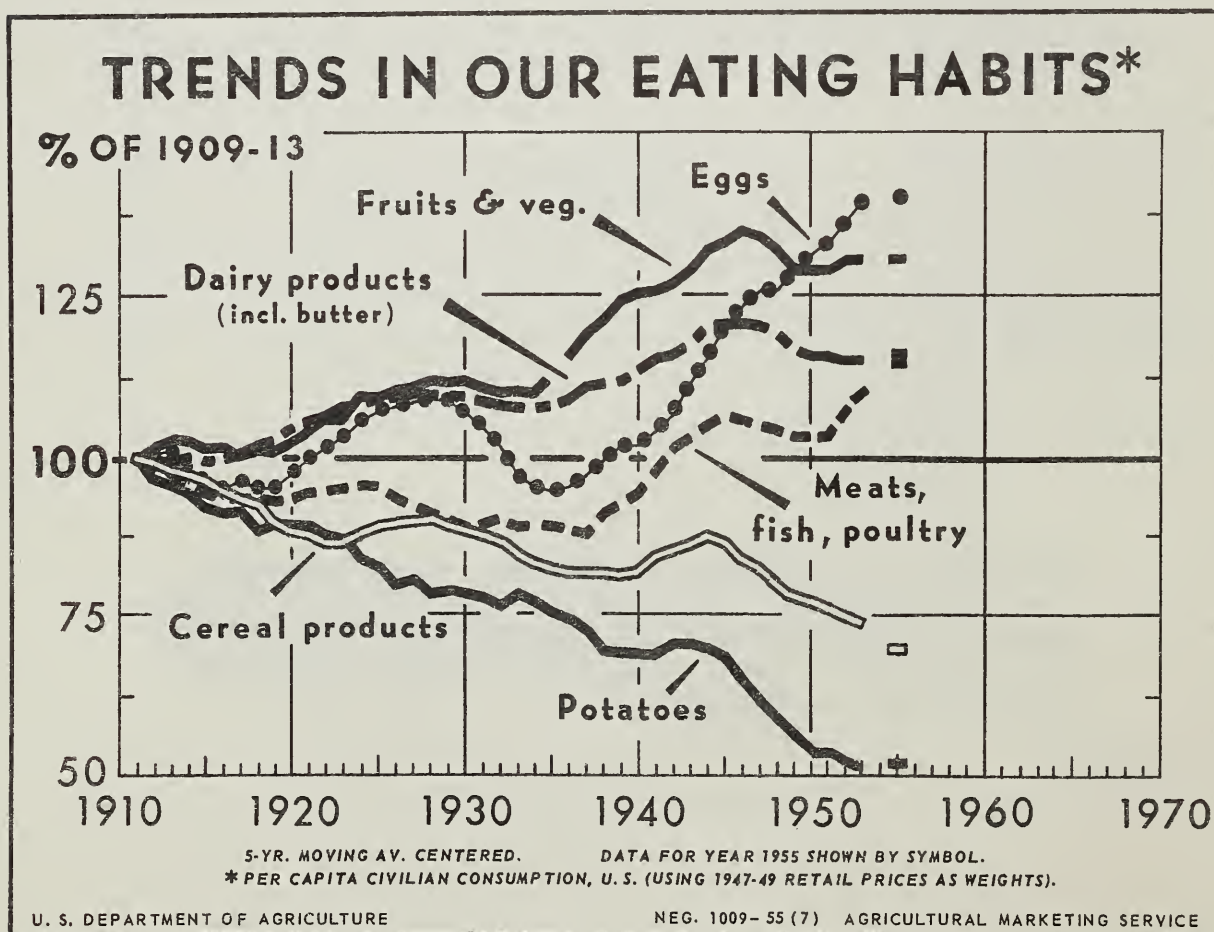
Food and nonalcoholic beverages account for about 27 percent of all consumption expenditures. (8)

Farm families devote about the same percentage of their money expenditures to food as do nonfarm families. (8)

Food consumption varies with broad occupational groups because of differences in physical exertion. Wage earners consume more food than clerical, business, and professional groups. (8)

Trends in consumption

Eating habits have altered radically over the past 50 years. We eat more of fruits and vegetables and less of cereal and potatoes. (8)



The amount of food consumed per capita measured in pounds has been remarkably constant over a period for which national data are available. When there is a rise in incomes more meat, eggs, citrus fruits, and green and yellow vegetables are eaten. (1) When you consume more of one food you eat less of another. Only a small percentage of Americans eat less than they need and can consume more food. They can eat only a different kind of food.

Dairy Products:

The trend is upward, but consumption of butter and condensed milk is lower. Consumption of nonfat dry milk solids is increasing. Milk consumption is still lower than recommended for most age groups.

Meat:

Meat, poultry, and fish have increased slightly. Veal, poultry, and eggs have shown the greatest increase.

Fats and Oils:

The pounds-per-person consumed are about the same, but there has been a shift between butter and margarine. Salad oils have increased, lard decreased.

We are getting a higher percentage of our calories from fats, although the pounds of fat consumed are about the same.

Fresh Fruits and Vegetables:

Cabbage and tomatoes have the largest volume except potatoes. Lettuce and celery have doubled in consumption since 1920.

The consumption of apples has decreased and citrus fruits increased. Frozen orange juice has increased rapidly.

The increase in fruits and vegetables indicates a marked increase in vitamin C in the past 40 years. (1)

Trends in Buying and Conserving

We purchase more and more of the food we consume; only farm families produce an appreciable amount for themselves.

Food reaching the home is more nearly ready for the table than formerly.

The practice of eating out is growing. Meals eaten out account for \$1 out of every \$4 spent for food. (3)

Canning and freezing are still increasing in city as well as farm homes. Nearly half of the Nation's urban housekeeping families reported some canning and some freezing during 1947. Those who did some canning averaged 85 quarts. The amount was greater in towns than in large cities. (4)

In 1951 farm families in the North Central Region canned an average of 174 quarts of food and froze 381 pounds. Fruits and vegetables made up three-fourths of the total food canned. Freezing, on the other hand, was largely of meat and poultry. (2)

Both canning and freezing were more important at middle than at low or high income. (2)

The amount of food consumed per capita generally decreases with the degree of urbanization. (5)

About one-third of the farm families in the United States had home freezers in 1954, as estimated by ARS, based on reports from 39 States in the 1954 census of agriculture. (5)

More than 200 prepared frozen food items are on the market today, constituting one of the most rapidly growing segments of the frozen food industry. (7)

There has been a shift to self-service in food stores. Impulse purchases are now one of the most important aspects of retailing. (8)

Income and Food Choices:

Consumption of high protein and protective foods such as milk, meat, fresh fruits, and vegetables, usually increases with family income, while that of potatoes and flour decreases as income rises.

Consumption of bakery products and canned and frozen fruits increased with income. When these were included in the calculations the amount of sugar and fats apparently rose somewhat with income. (6)

Chemical Additives:

The quality and sanitation of foods are improved. No evidence has occurred to indicate that new materials in crop production have endangered the health of people when properly used. (12)

Nutritional Status:

Dietary studies carried out in the U.S. show:

We are much better fed than we were in the past. We eat more fruits, vegetables, milk, and meat. (2)

Clinical dietary deficiencies are rare, but some sub-clinical deficiencies are believed to exist. (16)

Poorly fed Americans may be in any economic level, so are not confined to the lower economic level. (5)

The best-fed segment of our population based on age groups, consists of infants and young children. The poorest fed are the teen-age girls, and the homemakers of childbearing age. (19)

Teen-agers get about one-fourth of their calories from snacks that supply very few of the nutrients. (11)

The poorest meal of the day for many persons is breakfast.

- a. Many children go to school without breakfast. (10)
- b. Many workers have a cup of coffee and a doughnut for breakfast. (18)
- c. Many homemakers have a very inadequate breakfast. (9)

Trends in Dietary Adequacy

The nutrients most likely to be below the recommended amounts in farm diets are calcium, vitamin A, vitamin C, and in some cases protein. (3)

Many diets could be improved in order to meet the recommended daily allowance of the National Research Council. (2)

The iron, riboflavin, thiamin, and niacin increased about 20 percent between 1942 and 1948, largely owing to the enrichment program. (8)

Calcium intake increased largely because of greater consumption of dairy products. (8)

Urban diets increased in calcium and vitamin C. In the spring of 1948, almost three-fourths of the urban families had diets that met recommended calcium levels, as compared with about half in the spring of 1942, and only about one-third in 1936. As for ascorbic acid, 80 percent of the city families had diets that met recommended levels in the spring of 1948 as compared with only 40 percent 12 years earlier. (17)

Factors Affecting Adequacy of Diets

Diets are better--

1. The higher the formal education of homemakers.
2. The higher the family income.
3. The smaller the family. (5)
4. Where food is readily available. Home production made possible better diets, richer in preferred foods. For example, families that produced milk, meat, eggs, or potatoes for their own use consumed more of these foods in a week than families that depended solely on purchases. (3)

Nutritional Problems

Obesity has replaced the vitamin deficiency as the number one nutrition problem in the U.S. An estimated one-fourth of the adults in this country are obese; that is, of sufficient overweight to result in appreciable damage to health. (15)

Of the newer health problems the greatest are the degenerative diseases--chief of which is arteriosclerosis. Obese persons die earlier of the degenerative diseases. (13)

There is a steady increase in the share of total calories derived from fat. There is a slight increase in the amount of fat per capita but the total calories are down, causing an increase in percentage of fat from 32 to 40 percent. (14)

There are some indications that subclinical deficiencies remain prevalent; that is, conditions presenting an indefinite clinical picture, but, nevertheless, an indication of suboptimal health. Such deficiencies are suspected to result in loss of vigor, retarded growth, low resistance to infection, tooth decay, abnormal births, early signs of old age, and other forms of illness and debility. (16)

PROJECTIONS

Basic Assumption

Diets To Be Upgraded. With higher real incomes, particularly in the low and middle income brackets, diets are expected to be upgraded. The effect of this upgrading of diets will be expressed in further per capita increases in the consumption of high-protein foods and fruits and vegetables, which will require more food-producing resources per capita than present diets. Per capita consumption of starchy foods is expected to continue to decline.

Expenditures

Food will continue to take a fourth to a third of the family income.

Trends in Consumption

We will eat more high protein foods such as meat, eggs, milk, fish, poultry, and more fruits and vegetables.

If we eat more food of one kind, we will eat less of some other kind, because a very high percentage of Americans are already getting enough food. So we will probably continue to eat less potatoes and bread. Fat consumption may become less as research and education on weight control increase.

Trends in Buying and Conserving

There will be less food home-produced on farms.

Food will have more and more built-in maid service. More foods will be ready for the table. More food will be purchased in self-service stores.

More meals will be eaten away from home.

School lunches will be provided in more schools.

Home canning will decrease and home freezing increase, especially the freezing of cooked and baked foods.

Nutritional Status

We will continue to be better fed than in the past.

Owing to the lowered need for calories, we will continue to have obesity as one of our big problems.

Some people will continue to receive less than the recommended amounts of vitamin A, vitamin C, calcium, and protein, so emphasis on milk, meat, eggs, fruits, and vegetables is important.

The poorly fed segments of the population will probably continue to be teen-agers and homemakers.

Poorly fed Americans will continue to be in all economic levels, but the greatest percentage will be in the low economic group.

Eating Habits

Fewer families will eat meals together.

More children will be fed in schools.

Informal types of food service will continue.

More snack foods will be eaten, so this will cause a greater consumption of high-calorie foods that contain very few other nutrients.

More foreign foods will be introduced in America.

Trends in Food Preparation

Families will buy more food that is ready for the table.

Women will spend less time in the kitchen preparing food.

More equipment that leads to quick and informal preparation, for example, outdoor meals and patio cooking, will be used.

Frozen food will be used increasingly more. New and improved foods will be continually added.

Men and boys will do more of the cooking and shopping.

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Program Projection Report No. 3c

Clothing

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Clothing

INTRODUCTION (1)

Clothing in its dual role as a necessity and a luxury has always played an important part in consumer budgets and the whole economic structure of the Nation. Of the three essentials of life--food, housing, and clothing--clothing expenditures are the most flexible and therefore are more sensitive to changes in the consumer's economic status and subject to greater competition from other consumer goods and services. Personal care goods and services have more recently become "big business" also.

Family spending for clothing and personal care is influenced by a wide variety of factors, of which the most important are income, family size and composition, climate and place of residence, employment status of family members and the kind of work they do, and the range of choice in the quantity and price of clothing items in available markets.

Today, city and farm families buy much the same kind of clothing, yet the traditional lower-average clothing expenditures for farm families persist. Changing social and economic patterns have greatly influenced consumer demand for clothing.

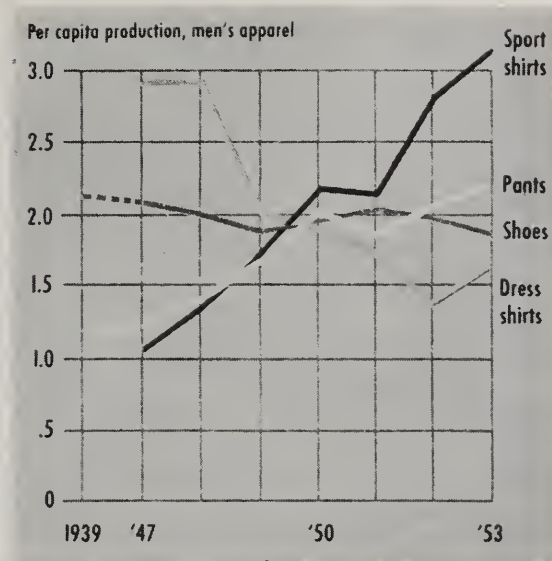
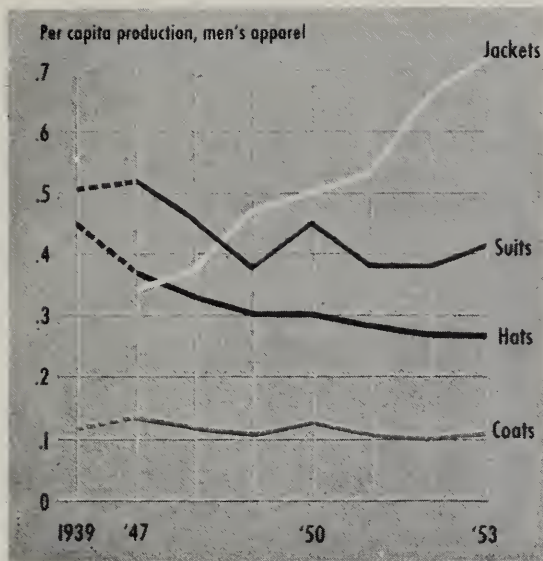
CHANGES IN PATTERNS OF LIVING WHICH AFFECT CLOTHING

Lighter-Weight Clothing

Centrally heated houses, closed, heated automobiles, and heated public conveyances have helped to bring about lighter-weight clothing for all members of the family. For example: Men's year-round suit fabrics used to weigh 14 or 15 ounces per yard. Now commonest weights are 11 to 12 ounces. From 1946 to 1951 the cuttings of men's regular-weight suits (in millions of units) dropped from 20 to 15. Meanwhile during the same period, summer-weight suit cuttings went up from 3.1 to 4.3 million units. This trend means more of the clothing can be worn the year round, style and purpose can become more important.

Informal Living

Shortened workweek and laborsaving devices have increased the amount of leisure time available to families. Leisure activities require more special-purpose clothing and have brought a swing to more casual clothing. At the same time, there has been a general trend from the more formal, conventional patterns of social living to the informal, with casual clothes designed for comfort. Ten years ago over twice as many dress shirts were produced as sport shirts. Today over 15 million dozen are sports, only 6 million dozen dress.

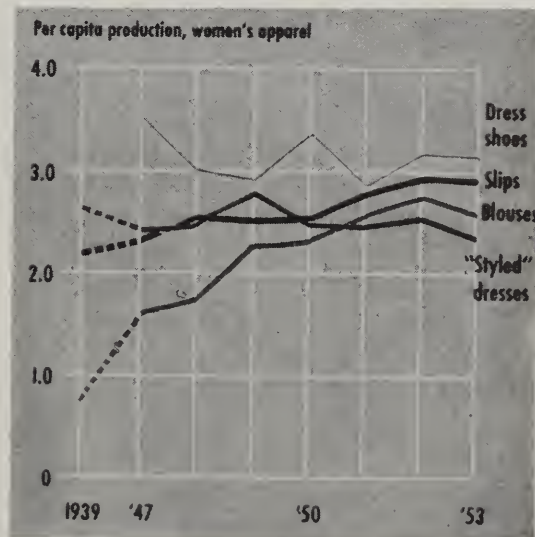
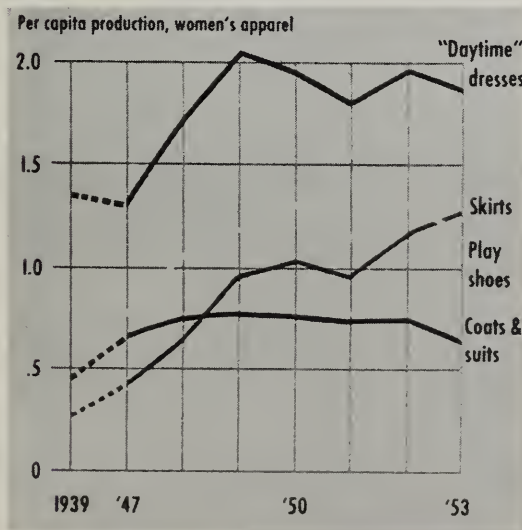


MEN'S WEAR: THE CASUAL ITEMS MOVE UP

Clearer point made by these per capita production figures is the gradual sag of such traditional men's items as coats, hats, and suits compared to the sharp rise in jackets (including sport coats). The latter just about doubled between 1947 and 1953.

The flashiest men's wear performer has been the sport shirt, up threefold in six years as dress-shirt output slumped. Pants, as charted above, mean work pants, not dress slacks. Their growth connotes the wide use of dungarees for loafing and household chores.

Charts 1 and 2.



WOMEN'S WEAR IS A STUDY IN SEPARATES

The sharp 1947-50 rise in per capita output of "daytime" dresses, most of which retail at \$7.95 or below, reflects the consumer's tendency to buy more garments at lower unit prices. Skirt output, nearly trebled since 1947, reveals the casual trend.

The blouse almost matches the growth of the skirt, but not quite, since sweaters also go with skirts. In contrast to the "daytime" dresses charted at the left, there has been little change in per capita output of "styled" dresses, most of which retail from \$8.95 up.

Charts 3 and 4.

Television keeps families at home together: Findings in television studies show that husbands spent 43 percent more leisure time at home, wives 40 percent more, and children 41 percent more. Television owners entertained more guests in homes than before television (2).

"Not so long ago it was quite customary for a family to go to the same resort or the same place for its vacation each year. It is quite apparent now that the trend is to get into the car and spend the vacation travelling from one place to the other, stopping at motels or camping out along the way, using State and national camping areas" (3).

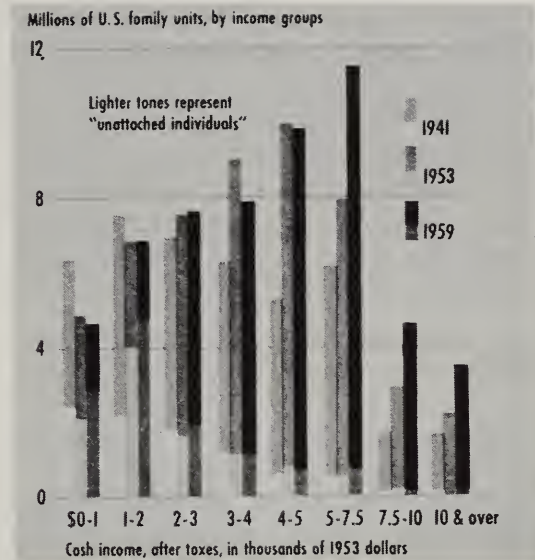
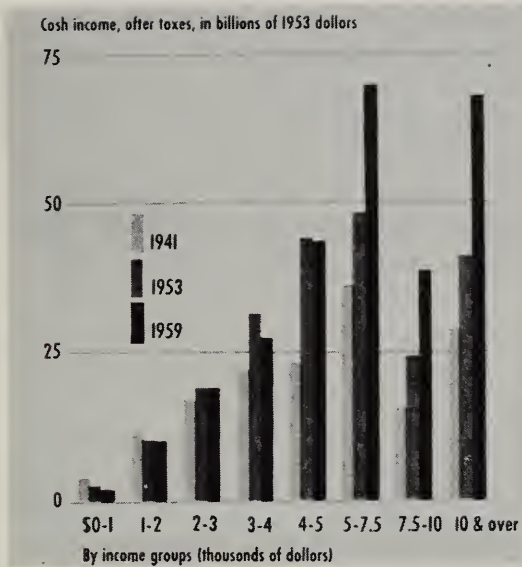
Interchange of Clothing Customs

Population mobility, integration of rural and urban population, radio and television, widespread distribution of national magazines, wide circulation of newspapers, and rapid means of transportation have almost eliminated differences in dress between different segments of the population. The time lag in fashion between metropolitan and rural areas has been almost completely eliminated. Today, over half the rural population lives within an hour's automobile ride of a city of 100,000 or more. The country today is 64 percent urban, and urban characteristics permeate the countryside.

The farm population has been characterized by a high degree of shifting between farm and nonfarm areas. In almost every year since 1921 more than 2 million persons have moved to or from farms. In general, the movement away from farms has been greater than the movement to farms. Migration from the farm population since 1950 has occurred among all age groups of both sexes.

Growth of Middle Market

The growth of the middle-income group has increased the middle market and its influence. Style has taken the place of dictated fashion in women's clothing, while the color and style factors have become more important in children's and men's clothing. Family units with \$4,000 to \$7,500 in real disposable income (adjusted for inflation and taxes) now comprise 35 percent of the total and receive 42 percent of the total consumer cash income. Appearance factors will become more important for the whole family, and women will have more individual choice.



SIX MILLION MORE FAMILIES WITH CASH INCOMES ABOVE \$5,000

By 1959, provided employment stays high and productivity keeps on rising, the poor will have become relatively fewer and the great middle class will have become still bigger and more prosperous. (There'll even be some more rich people, too.) The number of family units will increase 9 per cent, but total cash income will rise 26 per cent. The number of family units with less than \$5,000 cash income will shrink, and so will their total expenditure. *But the number of family units with more than \$5,000 (in 1953 dollars) will increase by nearly 50 per cent, and will account for 60 per cent of all U.S. consumer expenditures.*

Charts 5 and 6.

Women Working

The increase in the number of women working away from home and participating in community affairs has heightened the demand for easy-to-care-for clothing. It may also mean that more of the family's clothes must be purchased ready made and there is less time for mending and alteration. Women

working away from home may require more clothing and of a different type. The amount of money necessary to clothe the family tends to increase. The number of working wives continued to rise in 1955, reaching a new alltime high of 11.8 million. This represents an increase of some 600,000 over the previous year. The proportion of married women either employed or seeking jobs has increased each year since World War II, reaching 29.5 percent in April 1955 as compared with 28 percent a year earlier. Since 1950, the rate for younger married women (under 34 years of age) has held just about constant, fluctuating around 26 percent, while that for women between 45 and 64 has advanced from 22 to 29 percent. More mothers of children under 6 are working; they increased from 15 percent between April 1953 and 1954, to about 16 percent in April 1955.

Good Taste

There is evidence of a tremendous development in good taste in the American consumer. At the same time the growth of the mass market has permitted the manufacturer to put clothing of better design into the hands of more consumers. It is possible to select articles in good taste even in low-cost garments. A comparison of advertisements, mail-order catalogs, and fashion magazines of 25 years ago with those of today reveals this change.

Changing patterns of living which have affected clothing will continue to operate and further change the amount and kind of clothing people will use. Such developments as air conditioning will change the needs. Extension will need to keep alert to changing trends as they affect the people with whom they work.

TECHNOLOGICAL ADVANCES IN CLOTHING

Textiles

It is difficult to keep abreast of the changes taking place in textiles. There are a dozen or more fibers and numerous finishes being used on the fabrics going into clothing today. There has been much shifting of the different fibers, blends, and combinations for different end uses. New developments in yarn and fabric construction are giving new properties to fabrics, both in performance and in appearance. New dyes and finishing processes have tended to decrease the amount of clothing discarded because of fading or shrinking. Consumers can now get such "built-in" features as moth repellency, shrinkage control, permanent stiffness, spot and stain resistance, anti-crease, and minimum ironing. The initial cost may be increased, but the upkeep cost in terms of money, time, and energy is usually lowered. There will continue to be technological changes in textiles which will change consumer uses.

Production

High-speed spinning, weaving, and knitting techniques, mass production of clothing, and other streamlined procedures have enabled manufacturers to put large quantities of good quality products on the market. This has lessened the need for home sewing, as illustrated by knitting developments and underwear garment manufacturing, which have virtually eliminated the making of these items at home.

Merchandising

There have been many changes in merchandising patterns in efforts to assist and appeal to purchasers. Pre-packaging and clothing displays enable the consumer to shop with a minimum of help from salespeople. As a result, purchasers are coming to depend more on labels, package identification, and name brands rather than salespersons. However, sales personnel are being trained in many instances in order to render better service and be able to answer questions concerning the performance and care of the various types of clothing. More of the manufacturers have instituted quality control programs for their products and are labeling or tagging to identify fabrics and garments as to shrinkage, washability, crease resistance, water repellency, and the like.

Labeling

Proper care and handling of today's fabrics is not possible unless they are fully identified as to fiber content, finish, and performance. Most segments of the textile industry are now in favor of some form of labeling legislation in order to assure accurate description of the material for the consumer. Consumers can assist in this program by giving close attention to existing labels and wherever possible avoiding unlabeled or vaguely identified materials.

CLOTHING AND THE FAMILY INCOME

Relative Decline of Clothing Expenditures

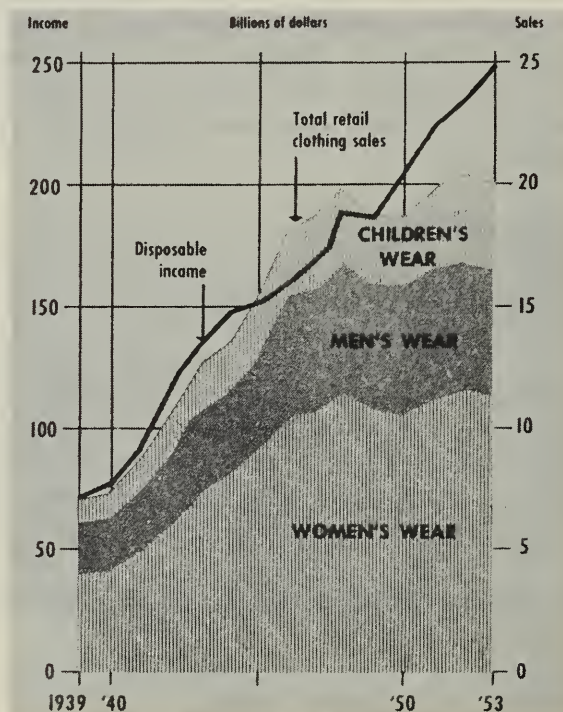
The proportion of total expenditures used for clothing has been declining since 1948. Clothing now takes only 8 percent of the consumer's dollar, whereas personal care in recent years has accounted for somewhat over 2 percent. The trend since World War II in per capita clothing expenditures, adjusted to take account of price changes, has been downward for the account-keeping farm families, as for the total population.

Several factors have contributed to the relative decline of clothing expenditures:

- a. Better clothing at a lower cost.

- b. Decline of the use of clothing to show family's prestige.
- c. Changes in types of clothing due to informal living. Casual clothes cost less as a rule than the more formal types.
- d. Increase in the population of children under 5, and older people. Both groups require smaller expenditures for clothing.
- e. Increase in home ownership and resultant long-term commitments in connection with their purchase and furnishing have had an important effect on the relative importance a family gives to its clothing.

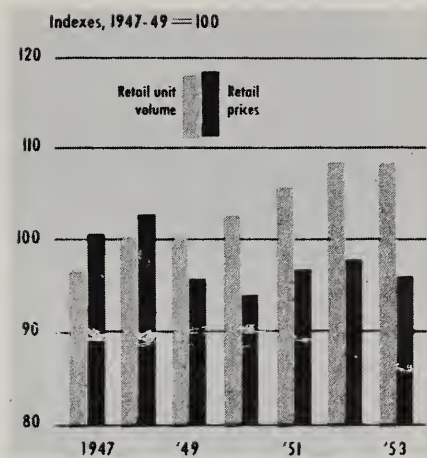
While proportion of income spent for clothes has declined in recent years the per capita consumption of clothing in numbers of garments has steadily increased. This long-range tendency should continue through 1955-59 and at the same time population will also be increasing, so the total consumption of clothing will increase even more. The steepest growth will be in children's clothing to meet the demands of a 30-percent expected increase in the 5- to 15-year-old group. What this physical increase will mean in terms of the family clothing expenditures will be somewhat determined by the level of clothing prices. It is expected that the general town trend in prices which resulted primarily from a change in the consumers' clothing choices has been halted. Disposable income spent for clothing may rise from the present 8 percent toward the traditional figure of 10.



APPAREL LAGS BEHIND INCOME

The end of the postwar clothing inflation plus a consumer switch to less expensive garment types caused clothing expenditures, as a percentage of disposable income, to drop well below 10 per cent for the first time in years. As the depth of the bands indicates, in recent years women have consumed 55 to 60 per cent of all apparel.

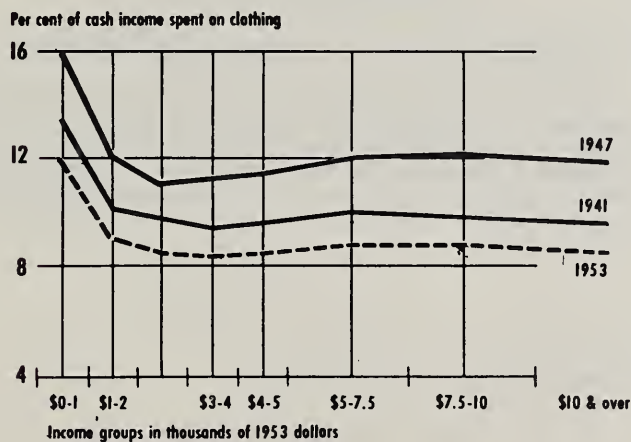
Chart 7.



REAL PRICES ARE DOWN, VOLUME UP

Though retail unit volume of clothing has consistently risen since 1947, the prices consumers actually paid for what they bought (called by the economists "implicit" prices) have tended downward. This real price drop, in contrast to the rise shown in official clothing indexes, measures how much the consumer has changed his garment "mix."

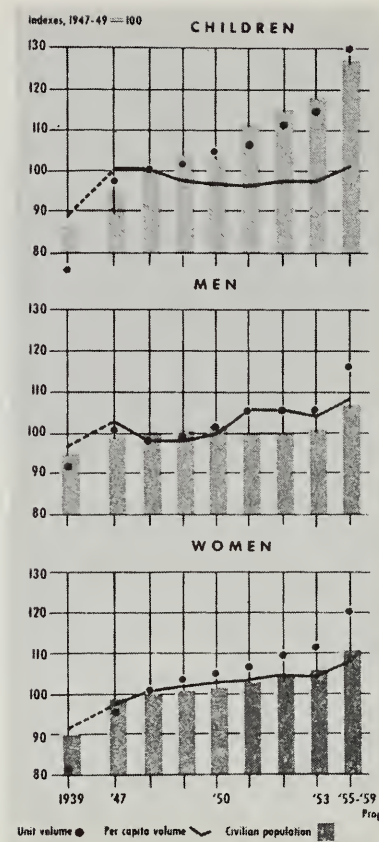
Chart 8



THE PATTERN OF CLOTHING EXPENDITURES

The significant feature of the chart above is the near-parallel course of the three lines, showing the percentage of income spent on apparel by consumers at all income levels in three different years. Consumers in all brackets tend to raise or lower their clothing expenditures from year to year by about the same proportions and at the same times, and to act predictably as they move along the income scale. The bulk of clothing purchases are of course made by the \$3,000-and-up income groups.

Chart 9



THREE GAUGES OF CLOTHING CONSUMPTION

The fairly steady rise in both unit and per capita volume of clothing purchased is even more significant than down-trending prices. The dip in the male civilian population after 1950 reflects heavy inductions into the armed forces; the sag in men's unit and per capita volume after 1951 is the aftermath of Korea scare buying. Note how the higher proportion of children under five caused a temporary drop in children's per capita volume.

Charts 10, 11, and 12

Home Production and Maintenance of Clothing

Although no figures are available on the amount of home sewing, studies have shown that about three-fourths of farm families own sewing machines. Probably their widest use has been for mending and altering. New developments in sewing machines in recent years have undoubtedly increased their usefulness. In our present economy home sewing is not looked upon as much as a necessity as it is to satisfy creative needs. Market developments, fashion trends, and the do-it-yourself movement affect the amount and kinds of home sewing. The sewing machine and the mother and daughter's skill or potential skill is a resource for stretching the clothing dollar in the event of lowered income, or at times when money is needed for other family expenditures, or for getting such advantages as unusual, high-style fabrics.

The findings of a national commercial survey conducted in 1953 show that 96 percent of all women and girls engaged in some form of sewing. Sixty-three percent of the women who sewed made clothing and household items. The rest did mostly darning and mending.

A study in one county in 1955 by the Extension Service supports these findings. The national survey reports that among all women and girls over 12 now sewing, girls learned at an average age of 12 and women learned at an average age of 14.

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April 1956

Program Projection Report No. 3d

Housing, Equipment, and Furnishing

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Housing, Equipment, and Furnishing

HOUSE STRUCTURES

Trends in Farm Housing

The factual information available indicates that farmers spend nearly as much for new farm dwellings and for remodeling old ones as for service buildings. Expenditures for farm construction tend to follow farm income. The following table gives estimates of the amount farmers spend for both housing and service buildings as compared with estimated farm income.

Estimated expenditures for operators' dwellings and service buildings on farms as compared with farm income

	Operator dwelling(1) millions of dollars	Service buildings(1) millions of dollars	Farm income Gross : Net(2) millions of dollars	
1945	100	167	25,772	12,850
1946	409	447	29,324	15,000
1947	683	714	34,022	17,191
1948	738	806	34,586	15,943
1949	695	793	31,582	13,673
1950	763	872	32,105	12,857
1951	771	875	37,060	14,802
1952	750	860	36,928	14,051
1953	704	780	35,242	13,402
1954	637	704	33,999	11,814
1955	655(3)	745(3)	32,900	10,600

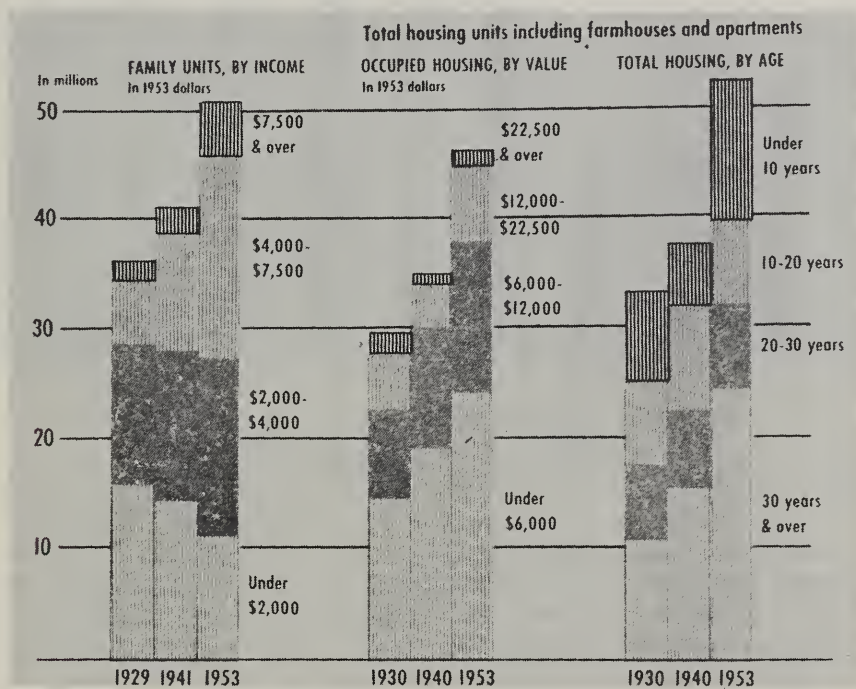
Trends in Preferences for One- or Two-Story Houses

The types of houses families want has changed over the years. Studies made in the four regions of the United States by the State experiment stations and the Department of Agriculture give some indication of the preferences of families in such features as the number of stories and basements. The following table (4) shows the type of house families who were interviewed now have, as compared with what they would like to have.

	Northeast		:	South		:	North Central		:	West	
Number of stories	Percent having	Percent wanting	:	Percent having	Percent wanting	:	Percent having	Percent wanting	:	Percent having	Percent wanting
One	3	34	:	72	74	:	25	66	:	68	85
More than 1	97	64	:	28	26	:	75	34	:	32	15
Basement	94	97	:	19	49(5)	:	73	88(5)	:	-	77

Year To Fix (6)

The nationwide campaign of builders, lenders, manufacturers, and government under the slogan "'56, the year to fix" is expected to produce 15 billion of modernization and fix-up spending, a one-fourth increase from last year. Housing officials believe the campaign not only will protect the country's 200 billion investment in middle-aged housing, but will fill in the possible slack of a letdown in new home construction in the next 6 years or so. Formation of new families is falling off because the small baby crop of the depression years is reaching marriageable age, but in the early 1960's the Government foresees another terrific housing boom.

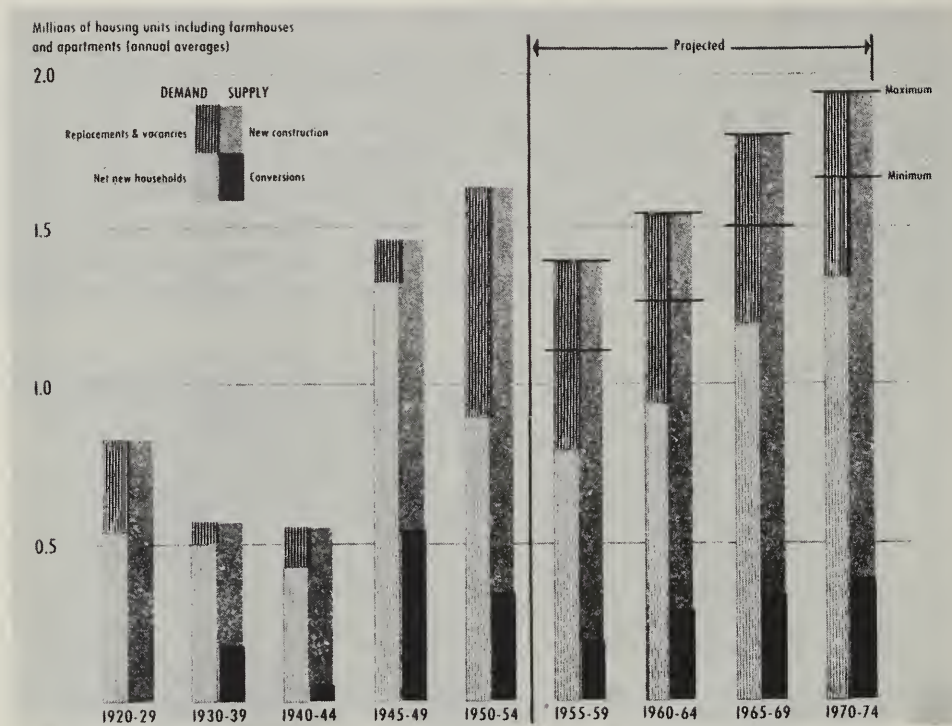


CHALLENGE TO THE HOUSING INDUSTRY

That challenge is to reverse the trend shown on this chart. Although the number of low-income families has declined, the number of low-value houses has increased even as they have grown older; and although the number of high-income families has increased, the number of high-value houses has decreased. There were, to be sure, extenuating circumstances: depression, war, postwar encouragement of the lowest-price housing.

But, even people with money didn't buy as much house in the postwar years as they could have. The industry can recover its 1930 share of U. S. spending in 20 years by achieving the maximum estimates shown in chart 2.

Chart 1



THE BOOM WILL DEPEND UPON THE RATE OF REPLACEMENTS

This chart projects two estimates of housing supply and demand to 1975. The minimum projection assumes very little replacement of existing housing; the maximum projection assumes that large numbers of older units will be vacated and scrapped and so lift U.S. housing back to what might be called its 1929 standard. The housing industry can conceivably *beat* the maximum in the 1950's by "borrowing" from the 1960's and 1970's. Even so, the rise in household formation in 1960-75 would still ensure an ever-normal housing boom.

Chart 2

HOUSEHOLD UTILITIES AND APPLIANCES

At present 94 percent of farm homes and a higher percentage of all other homes are electrified.

The average consumption of electricity on farms in 1940 was 1,819 kwh's per year and in 1950 it was 2,899 kwh's--an $8\frac{1}{2}$ percent increase per year. Assuming that the financial position of farmers will not change greatly, that the competitive position of electricity and other fuels will remain about the same, and that power supplies will continue to be adequate and dependable, it can be expected that the rate of increase will be even greater during the next 10-year period.

The Rural Electrification Administration estimates that farmers will spend over 1 billion dollars on wiring in the next 5 years.

A nationwide publicity drive for adequate wiring is being sponsored by many national organizations. They assert that more than 220 million homes in which modern electrical appliances are constantly being added have wiring facilities that are obsolete, under capacity, and unsafe. Studies have indicated that the percentage of saturation is very low for installed utility equipment, such as water-under-pressure, central heating, and automatic washing machines and driers, but that these items are being purchased and installed at a continuously increasing rate.

Many farm homes still lacked running water in 1954, although most farms are electrified (7).

The national expenditure for mechanical household appliances in 1950 was over 3 billion dollars, which is about 1.55 percent of total household consumption expenditure (8). The expenditure for such goods in 1960 is expected to be close to 4 billion dollars, only about 1.59 percent of the total consumption expenditure.

Manufacturers consider the market to be close to the saturation point for such products as an electric iron, mechanical refrigerator, and modern range. Producers look toward the formation of new homes and replacement of old equipment with modern design for a market for such equipment. Since many minor pieces of equipment are on the market, it is expected that more families will buy equipment of this kind.

Reduction in price of electrical equipment, due to the recent change in handling at the retail level, will make it possible for more families to invest in equipment. Any extensive change in the market for household goods will depend largely upon invention and innovation which will make old equipment obsolete. With increased income for the low- and middle-income groups it can be expected that more families will purchase laborsaving and small household appliances.

FURNISHINGS (9)

Purchasing habits of people in buying home furnishings seem to indicate a preference for comfort and entertainment to simple utility. The recent importance placed on style has reached the public through newspapers, magazines, and educational programs. But a smaller share of the consumer's disposable dollar is being spent on furniture. It seems likely that replacement buying has already been speeded up. The expansion of the replacement buying can be traced to the steady income advances of the post-war years, to the fact that replacements during 1950-53 were unnaturally depressed, and to an increase in number of households.

There are reasons for believing that the market will pick up a bit faster in 1955-59. Consumers spent \$2 billion on replacements in 1929, and \$2.7 in 1941 and \$3.4 billion in 1954 (using 1953 dollars throughout) or 80 percent of all purchases for furniture and floor coverings was for replacements.

Consumers spend less on furniture and rugs than they do on other house furnishings and wares which include a variety of goods. Spending for china, glassware, and the like, has held between \$1.3 billion and \$1.4 billion. Many items that were quite uncommon in homes before the war are now quite commonplace, such as electric blankets and magnetic can openers.

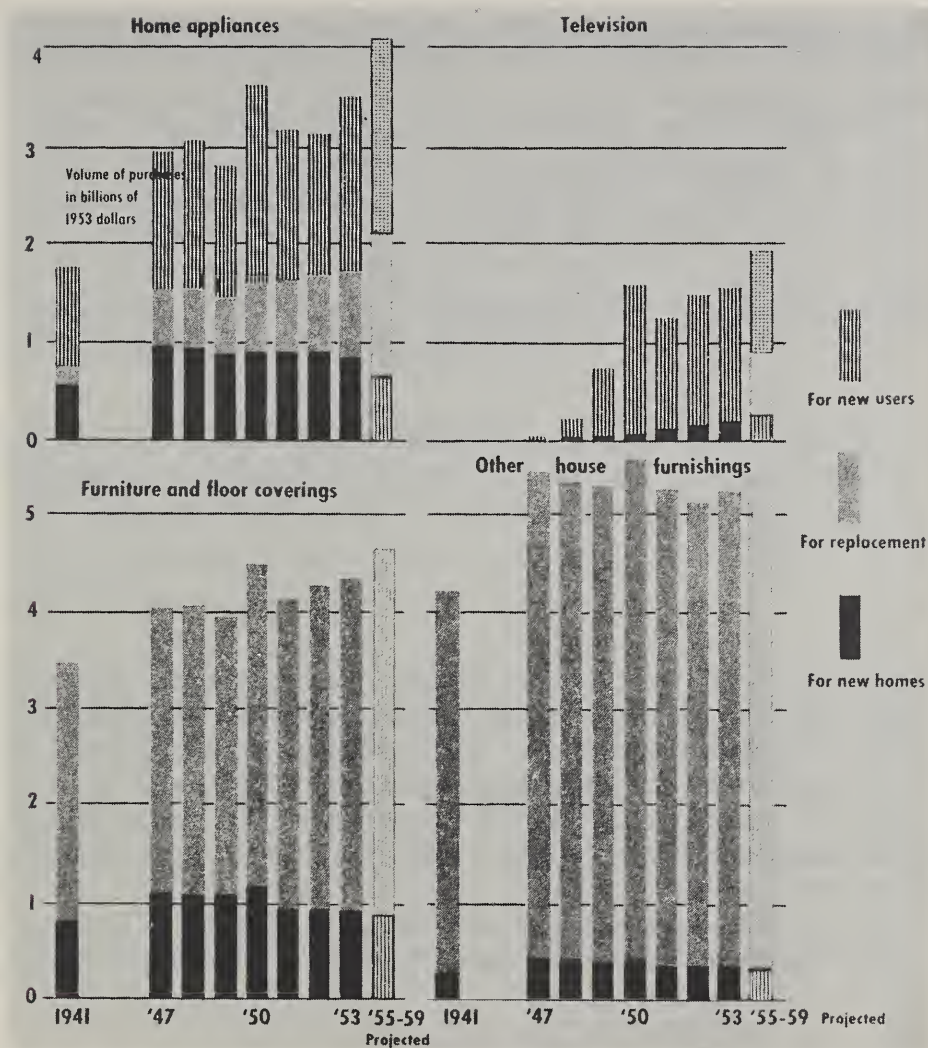
The durable house furnishings purchases (lamps, clocks, mirrors, carpet sweepers, scissors, curtain rods, etc.) have been \$1.2 billion; the semidurables (curtains, bedspreads, sheets, towels, lampshades, etc.) at around \$2 billion.

The 1955-59 prospects may be summed up this way:

Television and radio. Purchases may be expected to advance from about \$2.3 billion to some \$2.8 billion. Color television will account for almost the entire gain.

Furniture. Replacement will dominate furniture purchases and should thus increase total buying slightly.

Furnishings and housewares. The expansion of buying in this area is not expected to be significant--perhaps from \$4.8 billion to \$5 billion. An increase of no more than $2\frac{1}{2}$ percent a year is expected in the entire home-goods market.



TEN PER CENT MORE HOME GOODS

These charts show the physical volume of purchases of the main types of home goods. They were specially compiled by *Fortune* from a variety of data. The decline in household formation is having a depressing impact on both appliances and furniture — but it hardly affects the other home furnishings or television. Replacement volumes will be growing in all home goods by 1955-59, and though there will be fewer new households, the aggregate market should be up nearly 10 per cent from the 1953 total, on *Fortune's* projections. The trends vary from one kind of product to another, to be sure; right now, the expectation is that color TV and the air conditioner will provide much of the upward thrust suggested for 1955-59 in the two top charts of this group.

Chart 3

LANDSCAPING

Interest in landscaping farm and nonfarm home grounds for most efficient use is expected to increase with population growth, new housing, higher incomes, and more leisure. It is estimated that homeowners purchased about 10 percent more garden supplies and equipment--mowers, sprinklers, fertilizers, seeds, nursery stock, garden furniture, and the like--in 1955 than in 1954 (10). It is expected that this upward trend will continue. Landscaping is one of the first projects to be adopted by families actively engaged in farm and home development. As these participating families increase in number and demonstrate the kind of improvements that can be made, more farm homes will be improved for efficiency, beauty, and recreation.

In 1954 consumers were spending somewhat more than 136 million dollars (11) on plants, trees, shrubs and grass to beautify their homes and communities as compared with 98 $\frac{1}{2}$ million dollars (12) in 1949--an increase of 39 percent in 6 years.

PEST CONTROL

The need for pest control in buildings, furnishings, gardens, and in ornamental plantings has become of major importance. United States spends about 75.5 million dollars annually to control termites alone. Much of this could be prevented by proper construction. The trend to rambling one-story houses with concrete slab floors favors termite infestation, if necessary precautions are not taken in new construction or in remodeling.

The passing of home gardens and orchards is due to a large extent to pests. The cost and difficulty of pest control are discouraging factors.

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Program Projection Report No. 3e

Child Development and Family Life

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Introduction

The purposes of the work of this committee were as follows: (1) to present some outstanding facts and trends with respect to areas of child development and family relationships considered especially important for extension workers, and (2) to raise questions in the course of presenting the material which it is hoped will be suggestive of areas to receive consideration in planning programs in this field.

It is impossible, of course, in this brief compass to cover completely any of the areas discussed. Our purpose was not so much to provide answers for those engaged in program planning, but rather to summarize some of the more important problems confronting education in child development and family relationships.

Some Salient Facts and Trends in Family Size and Composition

The effects of World War II on marriage and birthrates were similar to, but more pronounced than, the effects of World War I.

It is still too early to know to what extent this recent "baby boom" is due to such transitory factors as the abnormal increase in the marriage rate and the drop in the average age of marriage, or perhaps to a tendency to have children closer together, and to what extent it may reflect a fundamental change in the ideas of married couples about family size.

Inasmuch as the younger women are responsible for most of the first and second births, it is not surprising to find these lower orders of birth showing the largest gains. The 1947 birthrates of 48 per thousand for first-born children and 31 per thousand for second-born were more than one-third above the 1921 rates and close to twice the depression low points reached in 1933. First and second births accounted for 70 percent of the babies born in 1947, as compared with 53 percent in 1921.

For none of the higher orders of birth did the 1947 rate even approach the 1921 level. For the fifth and higher orders, in fact, there was no reversal of the persistent decline that had carried these rates by the end of the 1930's to small fractions of the 1921 level. By 1950 the first-birth rate, reflecting the decline in the marriage rate, had dropped off sharply, but it rose again in 1951. The rates for second and third births in both 1950 and 1951 were above the 1947 level and well above the 1921 rate. Evidently many of the war brides are having 2 or 3 children and having them close together.

These figures do not permit final conclusions, for not enough time has passed to demonstrate whether the war brides of a few years ago who have already had 2 or 3 children will want to have still larger families. The evidence to date, however, does not indicate a return to the very large family. On the other hand, perhaps fewer of the newly married couples will remain childless, and more of those who do have children will want to have more than one. If recent tendencies may be taken as a clue to the future, it appears likely that family size will be more uniform, with the typical family having 2 or 3 children born fairly close together and early in marriage. This outlook would of course be radically altered by a severe depression. Such an economic calamity would, as in the 1930's, lead not only to a postponement of many marriages, but, with birth control as widely practiced as it is today, to a deferment of births as well. (1)

Working wives.

The number of working wives continued to rise in 1955, reaching a new alltime high of 11.8 million. This represents an increase of some 600,000 over the previous year. The proportion of married women either employed or seeking jobs has increased each year since World War II, reaching 29.5 percent in April 1955 as compared with 28 percent a year earlier. Since 1950, the rate for younger married women (under 34 years of age) has held just about constant, fluctuating around 26 percent, while that for women between 45 and 64 has advanced from 22 to 29 percent. More mothers of children under 6 are working--from 15 percent between April 1953 and 1954, to about 16 percent in April 1955. These facts raise questions concerning the responsibilities of families and communities in the provision of day care for the children of working mothers.

There is much seasonal variation in labor force participation of married women. September and October are peak months when farm harvesting is at a peak; the low month is February.

By 1975, a substantial portion of the population (an estimated 60 to 65 percent) will consist of persons born before 1955. Persons in their late teens and early twenties, representing roughly the college age group (18 to 24), will increase rapidly after 1960 and may number almost 25 million by 1970, or 10 million more than at present. The number of persons 65 years old and over will also increase substantially. In 1955 these numbered 14 million, and by 1975 they may reach 20.5 million. (2)

In summary.

The long decline in marriage and birth rates was reversed after our entry into World War II. It appears that the continued high rates reflect a changed attitude on the part of

young married people toward family size. Apparently there will be fewer families with one child or none at all, and more with 2 or 3 children. But there is no evidence yet of a return to the very large family which was quite common in the 19th century. (3)

Trends in Obligations for Military Service

Since World War II, every family in the United States with sons under 21 years of age has been faced with compulsory military service. This is new in our American culture.

The Reserve Forces Act of 1955 brought into effect a greatly revised Armed Forces reserve program. There are many choices now available for young men under the new act. Since 1951 the term "military obligation" has meant that a young man was required to serve his country, on either active or reserve service, for a total of 8 years. The new act establishes a 6-year obligation for all men entering the Armed Forces after August 9, 1955. (4)

The present law requires every boy to register with the Selective Service System after his 18th birthday. In so doing, he becomes liable for induction into active military service at any time between the ages of 18½ and 26. There are several possibilities for meeting "military obligation":

1. Registering for the draft (the Selective Service System) and being inducted into active service.
2. Enlisting in one of the armed services.
3. Enlisting in the Reserve for 6 years--active duty for 2 years during this time.
4. Enlisting in the Reserve for 8 years and taking a period of 3 to 6 months' active duty for training.
5. Joining an organized unit of the National Guard.
6. Joining one of the Reserve Officer Training Corps.
7. Entering one of the service academies, pilot training programs, or officer candidate schools.

This may raise the following questions:

1. Should families with youth under 21 know the requirements of "military obligation"?

2. How can we help families to plan ahead for the time when their youth will fulfill "military obligation"?

3. Should the youth know the many possibilities of "military obligation" open to them?

The following figures are provided by the armed services (5) and show the number of youth under 21 on duty in the armed services for the past 5 years.

<u>Total youth under 21</u>		<u>Draft figures</u>	
1951	832,000	1951	587,000
1952	879,000	1952	379,000
1953	1,007,000	1953	564,000
1954	809,000	1954	265,000
1955	840,000	1955	61,000(first 5 months)

These figures include relatively few women.

According to the armed services it is difficult to estimate the number of youth that will be taken into the services during the next 5 to 10 years. Under normal conditions, the number will be about the same as for 1954 or 1955. The new Armed Services Act has had very little effect to date.

The Selective Service of the United States cannot give information from the national headquarters as to the number of youth draftees or enlistees from the counties. However, it is possible for a county agent to get such information from county draft boards.

Home and Family Recreation (6)

It is truly said that "the family that plays together stays together." Suitable and adequate recreation activities are essential for all family members--father, mother, children, and older relatives. Wholesome recreation in play and leisure-time activities promotes good physical and mental health. It contributes to the development of personality and leadership, which many parents hope for themselves and for their children. It strengthens family friendship and unity. It is a means of building happy family memories and traditions. It encourages participation in groups. Most of all, adequate recreation is a part of successful work and family living. In this day of tremendous production capacity and problems of surplus production, more farm people might well afford to apportion a little more of their time to enjoying life and helping their children through adequate recreational opportunities to grow up to be fine young people.

Several changes affecting home and family recreation have occurred during the last generation or are on the horizon:

1. Shorter work periods. The average nonfarm employment work-week was 50 hours in 1925, 40 hours in 1950, and a 32- to 35-hour week is expected during the next 5 or 10 years. The average length of farm workdays and weeks is also shorter, and many farm and ranch families also go away on vacations, on Saturday shopping and social trips, and join in other activities.

2. Farm people look upon recreation with greater favor today than a generation ago. There is more belief in the old adage, "All work and no play does make Jack a dull boy." Play is no longer regarded as a "thief of time."

3. Family expenditures for recreation have more than doubled since 1940 (adjusted dollars), indicating that people are willing to spend more for recreation and to take time out for leisure activities. Main increases in spending for commercial recreation have been for playing pinball machines, sports tickets, photography equipment, collectors' items, craft supplies, and reading materials. On the other hand, television, radio, and improved record players have increased time spent in home recreation, as also have home music, reading, drafts, and other hobbies.

4. In addition, there has been greatly increased interest in family do-it-yourself projects, home gardening, camping, and touring. All these offer splendid opportunities for family leisure-time activity of the participating type. More interest is being shown in recreation of this type in contrast to the spectator and commercial types.

5. Another trend is the increased realization that recreation does have a part in sound child rearing and in the solution of youth adjustment problems. Opportunities for wholesome recreation and related social activities are a must today for both happy family life and the individual development of young people.

Much suitable recreation can be provided at home, and the trend in this is definitely upward. Many regular home activities, such as table setting and celebration of special days, can be arranged to have recreational value. Interest can thus be added to family living as well as an enrichment of the lives of individual persons that will be of lasting benefit to them. Many more farms and ranches could have a horseshoe court, a shuffleboard platform, and a croquet set.

Development of recreational skills and habits is also an important part of the preparation for later years when they will be especially useful, for suitable leisure-time activity is one of the main needs of older

people if they are to have happy living. The more that such activities can be creative activity the better. Rendering community service is an especially helpful and useful type of leisure-time activity which can have much recreational, creative value for persons of all ages.

Good State and local resources for recreational planning would be school people, church pastors, hobby-craft store operators, county and city recreation departments, libraries, State extension recreation specialists, and the National Recreation Association, 8 West Eighth Street, New York 11, N. Y. A helpful publication is the bulletin, Planning Recreation for Rural Home and Community, which is available for 30 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Education for Personal and Family Living

The pattern of the self-sustained, authoritarian family changed radically with industrialization. Farm isolation gave way to city congestion. Manufacturing moved out of the home into factories, taking the whole family with it. Communications and transportation opened up. Men and women changed jobs, often moving their families from one community to another.

They came into contact with outside groups, with different and often conflicting cultures as public and private agencies came into being; they met many of the needs of families which families themselves could no longer meet alone. Family members sought education, recreation, and employment outside the home. The religious influences of the family diminished, the roles of the various members became somewhat confused, and the father lost considerable prestige as the mother began breadwinning. Parental control weakened. These changes were not sudden nor without conflict and tensions. The changes were not bad in themselves; industrialism freed family members from hard and time-consuming tasks and created leisure for rewarding work and play. (7)

An increasing number of agencies are undertaking family life education projects on an exploratory basis. Dr. Ellis White states that "there is an enormous, largely untapped reservoir of potential leadership--doctors, nurses, lawyers, and other professional and nonprofessional people, not now working in this field, who have information, experience, and skills which can be used. The job is tremendous. The skills and contributions of many agencies and professions are needed to meet the needs and demands." (8)

The major changes in curriculum content in the secondary schools have been a decreased emphasis on mathematics and ancient languages. The most recent development has been in the field of social studies.

This has been a matter not only of increasing emphasis, but of new content and orientation. Society and its institutions are currently regarded as part of man's environment and consequently of parallel importance to the physical world. This viewpoint is increasingly influential in the secondary and even the elementary schools.

In 1951-52, 30 States and 3 Territories utilized Federal funds to subsidize supervision and counselor training conducted by State boards for vocational education, 15 for counselor training in institutions, and 13 for the support of a few local programs.

A study by the United States Office of Education in 1951-52 reveals that 17 percent of the high schools in the United States reported having one or more staff members working in the field of counseling for at least one-half of his or her time.

Schools are becoming aware of the need for counseling services. Certification requirements for school counselors are mandatory in 21 States, the District of Columbia, and 3 Territories; in 8 States they are optional. Fourteen States are now developing a plan for certification or are in the process of revising present plans. Nine States have no counselor certification plans under way, while 7 States have had certification plans since the early thirties.

Some Trends in Education (9)

Educational trends and patterns are making heavy impacts on family living. An increased emphasis is being given to the importance of further education and training in a society increasing in complexity.

Overcrowded schools and a shortage of teachers and classrooms bring areas of concern to parents. By 1960, America under present conditions will be short 750,000 teachers and 476,000 classrooms. Forecasts for the 10 years through 1964-65 indicate substantial increases for each year ahead, with a diminished rate of increases in elementary schools toward the end of the 10-year period.

Parents are becoming more interested in the controversies on educational philosophy. What is the most effective education for a child? Should the schools be teaching more reading, writing, and arithmetic, or should more progressive educational methods and subjects be taught and employed?

School tenure has been increasing, and this has direct implication on family living. Youth of high school age today are remaining in school longer than those who were of the age a decade ago. Out of every 100 pupils enrolled in the 9th grade, 53 complete the 12th grade. The percentage of school dropouts has been continually decreasing.

Youth employment in part-time jobs has been on the increase. This affects not only family income but also family relationships. An increasing number of part-time jobs are being filled by high school students outside school hours. Such part-time jobholding increased for the 14-through-17-year-old group from October 1953 to October 1954. Some of that work is in casual and short-hour jobs, including babysitting, carrying newspapers, and messenger service, especially for those under 16. During the past few years there has also been an increase in the number of high school students enrolled in work-school curriculum.

Trends in Rural Life and Education Are Toward: (10)

1. Specialization.
2. Movement of people--or, in other words, a trend toward a movement of people from sparsely settled areas and tremendous growth of suburban areas.
3. More educational effort in preparing rural young people and rural adults with skills and competencies, and understandings necessary for making a satisfactory adjustment to a new and different environment.
4. Reorganization of local school districts into larger administrative units and to consolidated schools.
5. A new unity of efforts and for a spirit of cooperation among all groups, agencies, and organizations serving rural people.
6. Increasing research involving people and the way they work together, thus providing guidance to leaders in the field of education in their efforts to keep people educationally informed to help them understand school programs and the problems, and to encourage their active participation.
7. Extension of secondary schooling beyond the current 12 grades to possibly 14 grades.
8. Shifts in type of farming in certain regions.

Education for International Understanding

The United States now holds a position of world leadership. This situation has created a desire among many Americans for greater international understanding, revealed in many ways. Elementary schools are becoming aware of the importance of language study. Secondary schools, colleges, and private groups are also stimulating an interest in the study of languages.

The increased interest in foreign travel by Americans is important in family living. The figures below show the number of passports for all purposes issued for the 10-year period 1946-55. (11) Figures do not indicate travel to the following countries, where no passport is required: Canada, Bahamas, Barbados, Bermuda, British West Indies, Trinidad, British Guiana, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Panama, Venezuela. Figures do not include the Armed Forces overseas except in a very few cases where special assignments are made. Passport figures do, however, include dependents of the military forces overseas. This helps explain the large number of housewives issued passports.

1946	-	188,935
1947	-	202,424
1948	-	230,435
1949	-	268,863
1950	-	299,665
1951	-	290,407
1952	-	395,337
1953	-	418,170
1954	-	450,049
1955	-	528,009

Of the total number of Americans issued passports in 1953, 217,343 were men and 200,827, women. Forty occupations were represented by this group: 76,214 gave their occupation as housewives, 32,542 clerks and secretaries, 31,095 skilled laborers, 29,577 students, 29,000 executives, 23,041 laborers, and 19,501 teachers. (12)

A conservative estimate of the number of Americans abroad each year for all purposes, including the military, is over 1 million. The trend is upward, owing to several factors already mentioned, increased availability of transportation, attractive rates, increased facilities and services, and higher levels of income.

Trends in Adult Education for Home and Family Living (13)

"Today we find adults participating in educational programs for home and family living in numbers not even dreamed of a generation or two ago. Enrollment figures from public schools, the Extension Service, and other agencies indicate that the growth of homemaking education programs throughout the United States has been phenomenal.

"This interest in adult homemaking education is understandable when we consider the factors that affect families today. Some of those factors are stated here in order to help clarify present trends in adult education. The ones, that in my opinion, have important implications for teaching adults are:

- "1. The lengthened life span provides a longer period of adulthood in which to learn.

"2. There is widespread realization that ability to learn is often more closely related to native ability and to interest than it is to age.

"3. Increased literacy and the high value placed on education for everyone make adults feel comfortable in seeking additional learning.

"4. Technological developments have changed the place and the way families live. The homemaker's job is becoming one of consuming readymade goods instead of producing foods, clothing, or household articles. The homemaker, whose role is consumer, manager, and companion, finds that her most important duties are to keep equipment in usable order, spend available money to the best advantage, care for the children, and maintain satisfactory relationships in the home.

"5. The commercialization of homemaking activities has deprived many family members of the satisfactions that accompany skilful production of home products. Likewise, the development of efficient production methods in industry has brought with it routine jobs that make the workaday world dull and monotonous for many people. The result is that family members are seeking experiences which challenge their imagination and creative abilities.

"6. The present status of our national economy has a direct effect on families. Everyone copes with inflation and taxes--and, in addition, many families strive to keep up with the neighbors or to own worldly goods that raise their standard of living. Families often face the decision of whether or not the wife and mother will work outside of the home.

"7. Changing roles of family members must be taken into account when we consider factors that affect families. Statistics lead us to believe that the working mother will be with us for some time. When women work outside the home and other family members assume household responsibilities, it may be the father instead of the mother who is most interested in learning efficient laundry methods.

"8. The emphasis placed upon democracy with different interpretations of democratic procedures sometimes confuses adults regarding their role as parents and causes them to seek help in understanding democratic family living.

"9. Advertisers constantly stress the importance of material goods through the radio, television, magazines, and newspapers. This means that families are bombarded on all sides with pressures to buy, to choose, and to use products which may or may not be of value to them.

"These are some of the factors that are influencing adults to seek education in homemaking. These factors are also being recognized by educators who must provide for learning experiences in keeping with present-day family living. Throughout the country certain trends are discernible in effective programs designed to meet the needs of adults in modern American society. The trends . . . are (1) teaching the whole family, (2) recognizing the different stages in the family life cycle, (3) considering the role of the family in modern society, (4) giving attention to modern concepts of learning, (5) teaching in many different ways, and (6) preparing leaders to teach adults.

"Enrollment records indicate that we are now on the threshold of the greatest expansion in adult education in our history. How can you make your greatest contribution to education for home and family living? It seems that every home economist can play an important role in this program by (a) taking cognizance of recent influences on present-day families, (b) considering each family as a unit in society made up of individuals who must learn together to make a home in keeping with their values and culture pattern, (c) capitalizing on the 'teachable moments' in the life of each individual as he progresses through the different stages of the family life cycle, (d) using many different ways to involve adults in learnings that can easily become a part of what they already know, (e) creating opportunities in which leaders and learners plan cooperatively the program and learning experiences that help families rear children prepared to assume responsibility in a free society today, (f) taking advantage of every opportunity, as a leader, to learn as much as possible about teaching adults effectively."

The Influence of Mass Media on Family Living

Leading newspapers have all shown increased circulation. Five of the Nation's leading women's magazines have increased their circulation by an average of 243,000 during the last 3 years. The 50 leading consumer magazines have also increased their circulation during this same period. There are increasing numbers of articles on child rearing and family living in numerous popular magazines.

Homes with radio sets have increased by 17 million during the past 10 years. Today radios are found in 93 percent of all farm homes and in 98 percent of other homes. (14)

Nearly 39 percent of the farm operators in the country have television sets. In areas where reception is good, as many as 88 percent of farm operators have sets. Television receives sustained attention, daily and nightly; 34 million sets are in use an average of 5 hours per day. Department of Agriculture employees feel that television opens a new and dynamic way of reaching farmers and that as farmer-operator interest in television increases, so will the interest of television stations in beam-ing programs to farmers. (15)

Trends and conclusions from television studies (16)

Television set owners:

1. Read fewer books.
2. Spend less time reading newspapers.
3. Tend to know less about current governmental affairs.
4. Attend fewer movies.
5. Spend less time listening to radio.
6. Have increase of visitors to their homes.
7. Visit less.
8. Drive cars for pleasure to a lesser degree.

It is the family with children that is likely to have television. There is an indication that children demand to see television, and consequently they are likely to be frequent visitors at the home of neighbors who have television sets.

Some parents feel that television programs are educational. Television brings families closer together in the sense that they spend more time in each other's presence than they did before. There is, however, very little interaction among family members when they watch television together, and the amount of time family members spend together exclusive of television is reduced, so that it is doubtful whether television brings the family together in any psychological sense.

Contrary to some claims, children do not spend more time with children of their own age, once they have television. The trend is for children who have television to separate and watch television in their own homes, rather than watch as a group, so that as more families acquire sets children spend less time with their playmates.

As compared with other activities in the home, television is absorbing. Many parents have difficulty getting children to leave the television set to come to meals. Some have solved the problem by serving meals to the children in front of the set.

Radio (17)

Radio is growing stronger in the grassroots of America, becoming more local, more intimately intertwined with the fibers of community life and economy than any other communication medium, including television.

The total number of radio stations on the air jumped from 2,100 plus in 1950 to more than 2,700 in April 1955, Federal Communications Commission records show.

There were 46 million radio homes in the United States in early 1955 as compared with 32 million television homes. Multiple set ownership of home radios has increased constantly. There has also been a steady increase in ownership of radios in passenger automobiles.

The county extension agents throughout the United States have steadily increased their use of radio broadcasts as an extension teaching method. In 1954 they made or prepared more than 206,000 radio broadcasts as compared with about 143,000 in 1950 and 42,000 in 1945.

Radio listening habits in television homes

Of all television households, 97 percent had radios. For all practical purposes one can say that all people listen to the radio.

One reason so many television homes own radios is that there are so many places where radio and television do not compete for people's attention. It is mostly in living rooms where radio and television compete. Only about one-third of home radios are kept in living rooms. There is evidence that television does not replace radio.

Television is being absorbed in stride by the Nation without hurting other media--including radio. Home entertainment and visiting friends are the only major leisure activities that have dropped sharply. In 1953 television passed out of the novelty stage; it had matured into a stabilized pattern in multiple-station areas.

Across the Nation 2 families out of 3 acquired television sets between 1948 and 1954, yet in these 6 years the amount of time the Nation spent with radio diminished less than 25 percent.

Having a television set in the home has affected very little the radio farm program listening habits of the people.

The loss in listening to the county extension agents' radio programs in open-country television homes in two Pennsylvania counties was much less than the loss in total radio listening.

Apparently television ownership has not particularly changed the time preferred for listening to farm and home radio programs. Noon still seems to be the best time for the men and early morning second. The hours after breakfast and noon are still about equally good for the homemakers.

Community Welfare Services for Children (18)

In 1954 the child population under 18 years of age was about 54 million, and it is expected to increase about 25 percent to 67 million by 1965. The infant mortality rate in 1955 was the lowest in history, about 25 deaths per 1,000 live births, but it is high in some of the Southern and Southwestern States. In 1953 we had 390,000 divorces in the United States, of which about 45 percent involved children under 18. The number of full orphans under 18 (both parents dead) declined from a peak of 750,000 in 1920 after World War I to only 66,000 in 1953. In 1952 about 150,300 children were born out of wedlock, including 54,000 white children. At the time of the 1950 census, 260,500 persons under 21 were living in institutions of all types in the United States, of which about one-third, or 95,000, were in institutions for dependent and neglected children. About 81 percent of these were in institutions operated under private auspices. According to records of the Federal Bureau of Investigation, about 475,000 children came to the attention of juvenile courts in 1954 because of delinquent behavior, which was the highest number on record. In 1954 juveniles (under 18) represented 58 percent of all persons arrested for auto theft, 49 percent for burglaries, and 44 percent for larcenies. It is estimated that about 250,000 boys and girls run away from home annually.

Certain groups of children have welfare problems that call for special attention; these are the adolescent in conflict with society, the children of migratory workers, mentally retarded children, and children in unprotected adoptions.

Main types of community services which parents and community leaders can encourage for the welfare of children:

1. Recreation facilities and activities which provide opportunities for wholesome play and use of leisure time.
2. Schooling facilities and programs which provide opportunities for a good education suited to local needs and conditions, including adequate guidance resources.
3. Health services, clinics, and other programs for adequate medical care and preventive health, including adequate school health conditions and training and mental health guidance for parents.
4. Character-building organizations and activities which also provide for the development of children and young people.
5. Orphanage and foster care of children which can produce as nearly normal children as possible.

6. Services for handicapped children where they can receive adequate corrective care and special rehabilitation education suited to their needs.

7. Juvenile delinquency prevention and care, especially including suitable court procedures, officials, and detention places.

8. Protection-of-income programs, such as life insurance, health insurance, aid to dependent children, and public assistance for families in economic needs.

These services are generally available through either public or private organizations or both. Some of the private welfare organizations are the American Red Cross, National Foundation for Infantile Paralysis, Association for Crippled Children and Adults, American Cancer Society, American Heart Association, the Salvation Army, and church organizations. Most of these organizations have State offices and many also have county units or local representatives.

Children's Bureau, Social Security Administration. Maternal and child health services to help mothers and children keep well. Include prenatal clinics, child health clinics, immunization services.

Services for crippled children, including crippled, blind, defective hearing, epilepsy, and other handicapping conditions. Medical care, hospitalization, and convalescent care.

Child welfare services, including helping children needing foster care, adoption services, and other problems.

Public Assistance, Social Security Administration. Administers aid to dependent children's program; aid to blind program.

Office of Vocational Rehabilitation. Administers special training programs for handicapped children and adults.

Most of these public services for children are not made available directly to families by the Federal Government but are administered in cooperation with State departments of health and welfare and other agencies. For 1956 Congress appropriated \$11,928,000 to be used for maternal and child health services, \$15,000,000 for crippled children services, \$7,229,000 for child welfare services, and \$67,700,000 for aid to dependent children. Additional funds for these and other child welfare programs are provided by State and county public agencies as well as by private organizations.

Data about expenditures and numbers of persons involved in various welfare programs and problems may be obtained from State and county health and welfare departments, State and county court records, State and county school records, and organizations like the State and county Red Cross chapters and the State and county tuberculosis and health associations.

Some Effects of Urbanization on Rural Family Living (19)

Direct contacts of farm, rural nonfarm, village, and small-town families with urban centers occur through full- or part-time employment, purchasing, marketing, entertainment, and visiting. Conversely, city dwellers are in closer touch than formerly with rural affairs through ownership of farms, country recreation, visiting, and travel.

More subtle indirect contacts between city and country have likewise multiplied and are redetermining the form and content of rural as well as urban society. Media of communication--radio, moving pictures, daily newspapers, and weekly or monthly magazines with their uniform national advertising--are having a strong influence on both rural and urban societies.

Many questions of social control are also inherent in plans for binding local institutions, such as banks, stores, churches, and schools, into centralized organizations with headquarters in urban centers.

The great flow and ebb of millions of country people into the cities and back again is making profound changes in rural-urban relationships. This mobility and these contacts have continued long enough to make many general differences between rural and urban centers less pronounced than formerly.

Some of the impacts of urbanization, but not wholly attributed to it, are:

1. The rural family has become more of a consumer center.
2. The levels of living have become more like urban families.
3. Rural traditional patterns have been influenced more toward urban society.
4. Family roles of men, women, and children are less well defined than formerly. Parents and young people find it difficult to clarify their relationships in the absence of a universally accepted pattern of male-female, and parent-child roles.

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Program Projection Report No. 3f

Health

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors, and subject-matter specialists and economists concerned.

Health

People--farmers, nonfarm workers, citizens, family members--are our most important asset, but the state of their health is the main factor in determining how effective this asset is.

Therefore, concern for the health of rural people is an accepted extension responsibility, because health so directly affects what people can do in regard to all programs and objectives in farming and living. Health makes possible the maximum development of man. Whether expressed or not, almost every individual and family ranks health high on the scale of human aspirations. Poor health is costly, not only in human suffering and loss of maximum achievement but also in money.

Some Basic Facts and Trends

It is well known that tremendous progress has been made in the status of health of the people. Life expectancy has increased from 48 years in 1900 to 68 years for men and 72 years for women today, and the average is expected to rise to 75 years by 1970. Death rates for all ages have fallen tremendously--92 percent for children 1 to 14 years and 32 percent for all persons over 55 years. Infant mortality, a main index of public health well-being, has declined from 99.9 deaths per 1,000 live births in 1900 to only 25 by 1955, about the lowest in history. The death rate from all infectious diseases combined dropped from 676 per 100,000 population to only 75 by 1950. But on the other hand, death rates for certain chronic diseases common to aging people more than doubled, as shown below:

Cause of death:	Percent of all deaths	
	1900	1954
Heart and circulatory diseases, cancer, and diabetes	25	70
Pneumonia, influenza, tuberculosis, intestinal diphtheria, typhoid	50	10

All the foregoing facts reflect two major trends of the last half century: First, the tremendous scientific advancement in medicine and health technology, and secondly, the changing composition of our population, which now includes more people than ever over 65 years of age. Still more almost miraculous developments in vaccines, antibiotics, surgery, psychiatry, and other health technology are said to be on the threshold.

Today people are more health conscious than ever before. Most of this is related to the trends mentioned and to a corresponding growth in the health education programs, especially those of the expanding voluntary health organizations and public health agencies, and the increased health information made available to the public through newspapers, magazines, radio, and television.

Family health is directly related to farm and home conveniences. Today more farm homes than ever before have conveniences that promote good health, such as electricity, running water systems, modern labor-saving homes and equipment, as well as telephones and good roads. (See other sections.) But in most areas there is still a long way to go in getting these facilities on all farms and ranches.

Another factor is the situation in regard to animal diseases transmissible to man, the most important of which are tuberculosis, brucellosis (undulant fever), and trichinosis. Tremendous progress has been made in the control of these diseases, especially in the testing of dairy herds and sanitation in handling milk. However, we must continue to keep our guard up in all areas, and further eradication is necessary in some areas. The major source of undulant fever is now from handling the meat of infected animals, and continued programs on eradication and care in handling meat are needed.

Today the heavy toll of accidents is also a problem. In 1955 approximately 92,000 persons were killed by accident in the United States and several hundred thousand injured. Of the accidental deaths, 38,500 or 42 percent, were traffic accidents, the highest number in 14 years. On the other hand, accidents about the home and in civil employment declined slightly in the last 2 years. Accidents with a death rate of 56 per 100,000 population took about two-fifths as many lives as cancer. Accidents were the leading cause of death among children under 14 in 1954.

The accidental death rate for farm workers is exceeded only in the mining and construction industries. About 14,000 farm residents lose their lives in accidents each year: 1,100 from tractor accidents, 2,700 from other farm work accidents, 3,500 from home accidents, 5,900 from motor vehicle accidents, and 1,300 from other fatal accidents. In addition, about 1,200,000 persons are seriously injured on farms annually.

In 10,000 fatal farm accidents during the 4 years 1950-53, about 13 percent occurred to children under 10, another 21 percent to youth aged 10 to 20, and 32 percent to persons over 55. The annual economic loss to the country from farm accidents is said to be about \$1,500,000,000.

Much more needs to be known about chronic illnesses, and we need to put what we know into more use. Chronic diseases not only take many lives but also cause great disability; for example, arthritis, rheumatism, bursitis, and rheumatic fever. Altogether it has been estimated that chronic disease results in 500 to 750 million man-days a year lost from productivity, public expenditures of about \$1.5 billion a year for medical and hospital services, and about \$1.5 billion for cash benefits, to say nothing of the suffering, grief, and upset in family plans.

Mental illness is sometimes called the Nation's number one public health problem. While reliable data on its extent are meager and scattered, it is a fact that on an average day in 1952 about 700,000 persons

were patients in nervous and mental hospitals, about 0.45 percent of the total population, or 1 in every 200. Half of all patients in hospitals in the United States occupy beds for the mentally ill. As many as half of all patients consulting physicians have either primary or associated emotional disorders. Dr. William Menninger, noted mental health authority, has stated that 1 in 10 of the population will need mental health attention at some time during life. Apparent causal factors in the increasingly high rate of mental ill health are our fast tempo of life, financial worries, and psychological insecurities, including individual group conflicts and inadequate prevention and control of juvenile delinquency. The problem is accentuated by large shortages in mental care and treatment facilities and in psychiatric personnel.

Health insurance. It is said that the tremendous expansion of voluntary prepayment health plans or insurance has been one of the major social developments of this century. Today about 60 percent of the population are covered by some form. Yet only about 25 to 35 percent of farm families have any, and many families know little about what is contained in their policies or about what to consider in selecting such insurance. The high cost of medical care and health protection necessitates consideration of it in family planning. Adequate preventive health care is usually cheaper than more costly medical care later, especially when incomes are low or on the decline.

Preventive Health Is an Expanding Approach

Today health is more than simply medical care provided by doctors and hospitals. It is more than merely the absence of sickness; it is a state of complete physical and emotional well-being. It is everything that families and communities can do for themselves in the prevention of disease and promotion of good health.

Therefore, provisions for adjusting to health conditions and for maintaining good health should be in the plans of every family. Of course, community health facilities and programs are a basic part of promoting and maintaining family health but individual effort is most fundamental. It is the responsibility of the family--

- (1) To give attention to healthful farm and home environment.
- (2) To follow desirable family health practices, including use of available resources.
- (3) To participate in health community action.

Sources of Information for Planning

Good sources of facts and ideas are the State and county departments of health, State and county medical and dental associations, State and county voluntary health organizations, the schools, court records, censuses, and health surveys and studies.

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Program Projection Report No. 4

COMMUNITY SERVICES

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Summary

EDUCATION

Public Schools

Public schools are now confronted with a rapidly expanding enrollment as a result of an increase in population and in the length of schooling. In addition, the role of the public school has broadened to encompass the preparation and training of the young, for life in an increasingly complex world. These changes will necessitate substantial increases in expenditures for more classrooms, better facilities, and more teachers. Continued reorganization of many of our school systems will help to promote the more efficient and economical utilization of these funds.

Out-of-School Youth Groups

Volunteer leadership must be obtained and trained to meet out-of-school educational needs of a growing youth population.

Adult Education

Adult education is expanding and is serving the many and varied interests of entire communities. It is putting to test skills in organization, coordinated planning, leadership, and educational methodology.

Libraries

Libraries, both public and private, are becoming more important and versatile in meeting educational, cultural, and recreational needs of both children and adults.

HEALTH

More than ever, people are interested in constructive action to make health information and services available to everyone. This is being accomplished through health insurance and by voluntary health agencies, alcoholic and mental health clinics, rehabilitation classes, golden age clubs, school health programs, and many other community services. Some are well established, others in need of concerted action and followup attention.

RECREATION

Wise use of leisure time is gaining status among rural people, and provision of recreation facilities and opportunities are legion today as compared with those of a generation ago. They are brought about largely by community action, and the challenge in this area is still great.

COMMUNICATION AND TRANSPORTATION

Many rural communities have a long way to go before the isolation of farm life is completely eliminated, before out-of-school educational opportunity is equal to that in towns, and before transportation difficulties are eliminated as barriers to economic progress.

WELFARE

Welfare services and programs have expanded greatly in scope. They not only relate to a wider variety of human needs than ever before, but they have become increasingly positive, with greater emphasis on rehabilitation and the elimination of causes of human distress.

Introduction

There is a deep hunger in our land and throughout the world for a new sense of community. The old world order with its traditional loyalties has been shattered and a new social order has not yet come into being. Today, methods of communication are rapid and numerous. Yet they have not brought men closer together. To communicate is one thing. To communicate together is quite another. And what humanity longs for, consciously and unconsciously, is the close communion of simpler days, when it was possible to hold intimate discourse, to enjoy an emotional sharing of ideas, to live a life of warmth and meaningful association with family, neighbors, and friends. A contemporary secular Milton could write a poem of epic grandeur that would touch every heart among free peoples, on community lost and community regained. -- Agnes E. Meyer in the Bulletin of the American Association of University Professors, Spring, 1955.

The community and its problems and services are the concern of many people, agencies, and organizations. They are by no means exclusive items for an extension program.

In program projection, however, extension committees may well be interested in communities with all their problems and services which are affecting the lives of people. Once an extension committee establishes a need in the area of community services, relationship with other groups will have to be determined. Some areas will call for cooperation with other groups and committees. Others will be entirely a matter of referral to appropriate agencies or organizations.

This leads to the following basic assumptions:

1. The community will continue to grow larger and more complex.
2. Rural-urban distinctions will further diminish.
3. Demands for services will continue to increase.
4. It will be important to work with people on a local basis.

The community itself, apart from services as such, must always be a fundamental concern because it is a main part of the total natural resource, economic, and social environment within which extension operates. Extension experience through the years amply confirms the essentialness of community orientation if any program is to be fully effective.

The Nature of Community Services

Community services are those resources and benefits which a family cannot provide for itself alone but which are obtained, provided, or made available on the basis of common usage by a number of families. Some of these services may involve or have had involved some degree of group action, such as the local post office or school. Others may more or less come from public or private agencies and become community services by their common acceptance and participation of the people, such as the services of a State library or a State hospital. Still others may be provided by an individual or firm, such as banking or physician service. Even the degree of group action may vary. For some services the people may be deeply and continually involved, while in others the part played by the people in initiating or maintaining a service may be only occasional or very nebulous.

For still further clarification, community services may be said to have the following characteristics:

1. Related to the basic concerns of the life of the people.
2. Used by or available to the people.
3. Provided by public or private endeavors, or both.
4. Established in accordance with the social values and recognized needs of the people.
5. Contributes to the feeling of mutual interdependence and community consciousness of the people in the community.
6. May serve one immediate local community or some larger area.

Community services are roughly classified below into two types, depending upon area served and degrees of group action involved:

1. Local action community services--those whose operation and development is based upon some degree of local group action or use by

the people in a single local community or some immediate larger local group area, such as two or three communities, or a county, or parts of two or more counties. In places like some parts of the Great Plains, even 2 or 3 counties may be involved in certain services.

2. Outside incoming services--such as those that emanate from State and national agencies with little or no dependence upon the involvement of people in initiating and maintaining them.

Here it may be helpful to briefly define the community: It is that local geographic area within which people live who have a more or less common feeling of belonging based on common needs and participating in one or more local activities and services. Factors such as where people go to church, to school, to trade, and to organization or club meetings are important in determining community boundary lines. In many cases, tradition is an important factor, also nationality or cultural background, for these help to produce unity and feeling of belonging to a place. Legal subdivision lines such as those of a township or magistrate district or housing unit may or may not be important in community identity. Sometimes a stream or mountain is a deciding factor.

Many communities are town or village-centered, large or small, and the community group embraces both the townspeople and the families living in the surrounding countryside whose activities center in the town. However, many other communities may be found which do not have a town but where relationships center on one or more factors such as an active Church or centralized school or perhaps a few stores. In places where distinctly differing groups of people live, such as racial or religious groups, one may find two or more communities embraced in the same area. By neighborhood is generally meant those smaller areas of more personal friendship within a community. In many parts of the United States, the trend is toward wider community relations, the county becoming more or less a community in some places and the first basis of planning community services.

List of Community Services

The following list of community services is intended to be suggestive rather than inclusive. In program planning a comprehensive list such as this would probable not be prepared, but rather as a problem is discussed the services relating to that problem would be reviewed.

A. Education

1. Schools

a. Elementary

- b. Secondary
- c. College
- d. Vocational classes
- e. Nursery school

2. Out-of-school educational services

- a. Cooperative Extension Service
- b. Libraries
- c. Evening classes

B. Health, safety, and sanitation

1. Health personnel

- a. Physicians
- b. Dentists
- c. Nurses
- d. Pharmacists
- e. Veterinarians

2. Public health

3. Hospitals

4. Voluntary health agencies

5. Health insurance

6. Water supply

7. Sewage disposal

8. Garbage disposal

C. Professional services (other than health)

- 1. Legal
- 2. Veterinary
- 3. Architectural
- 4. Contracting

D. Financial services

1. Banking and credit
2. Insurance

E. Commercial services

1. Family shopping
 - a. Food
 - b. Clothing
 - c. Drugs
2. Farm equipment and supplies
3. Agricultural processing, storage, and marketing
4. Electricity

F. Communication and transportation

1. Mail service
2. Telephone
3. Radio and television Broadcasting
4. Newspaper
5. Roads
6. Public transportation
 - a. Highway
 - b. Railroad

G. Welfare and security

1. Public protection
 - a. Police
 - b. Fire protection
 - c. Civil defense
2. Care of dependents and indigents

3. Red Cross
4. Civil defense
5. Employment services
6. Child day-care centers

H. Recreation

1. Commercial
 - a. Movies
 - b. Skating rinks
 - c. Bowling
 - d. Fairs
2. Public
 - a. Parks and playgrounds
 - b. Golf course, tennis courts, and baseball diamonds
 - c. Swimming facilities
 - d. Fishing
3. Private
 - a. Country clubs
 - b. Sportsmen's clubs

Following are some types of organization that provide community services:

1. Farm
2. Social
3. Fraternal
4. Religious
5. Youth
6. Civic
7. Units of government

8. Cooperation
9. Individual proprietorships
10. Partnerships
 - a. Profit
 - b. Nonprofit, mutual, or cooperative
 - c. Charitable
 - d. Districts (irrigation, drainage, soil conservation)
 - e. Franchised
 - f. Government-owned

Program projection may be concerned with one or several of these community services, and with various steps pertaining to them, such as initiating a needed service, maintaining a service, helping a service, or improving a service. The important thing in program planning is to consider services in relation to--

- (1) The needs and wants of the people
- (2) The adequacy of present services
- (3) What to do about providing or improving services in order to better meet the needs and wants of the people.

At this point an important factor to consider is the number of people or size of area required to support the particular service under consideration. Some services may be of immediate local community nature, while others may need to be provided on a county or wider area basis.

Education

PUBLIC SCHOOLS

What Are Some Future Educational Needs?

In 1955 public and private schools and colleges in the United States enrolled an estimated 39,557,000 students, 1,657,000 more than a year ago. The increase was as follows:

Elementary, grades 1 to 8	1,300,000
Secondary	258,000
College	99,000

Last year was the 11th consecutive year of increased total enrollment in schools and colleges.

Forecasts for the 10 years through 1964-65 indicate substantial increases for each year ahead, with a diminished rate of increases in elementary schools toward the end of the period.

At present there are too few teachers and classrooms. By present standards, in 1960 America will be short 750,000 teachers and 476,000 classrooms. Assuming one new classroom for each 30 additional pupils in elementary school, the increased numbers enrolled in 1955-56 call for an increase of 52,000 classrooms over the number in 1954-55. The supply of new teachers from colleges and universities in 1954-55 was approximately 63,400. The supply is less than the demand. As a result of new developments these educational standards may change.

Larger enrollments will occur not only because of population increase but also because of increased length of schooling. For example, youth of high school age today are remaining in school longer than those who were of the age a decade ago. As a national average only 53 of every 100 pupils enrolled in the 9th grade complete the 12th grade. However, the percentage of school dropouts has been continually decreasing.

By 1975, it is estimated that about two-thirds of the population will consist of persons born before 1955. Persons in their late teens and early twenties, representing roughly the college age group (17-24), will increase rapidly after 1960 and may number almost 25 million by 1970, or 10 million more than at present.

How Can Increased Educational Needs Be Financed?

The financing problem will be, how to make available for educational needs a more adequate proportion of our income.

In the past, public education has been financed mainly by property taxes levied by cities, towns, and school districts. Property taxes have been declining relatively as a source of funds for public schools. They provided about 85 percent of the public school money prior to the depression of the 1930's, about 65 percent during World War II, and 53 percent during the 1953-54 school year. More and more people are beginning to raise the question, Do property values share proportionately in increased levels of national income and production?

Sources of supports have shifted from the property type tax toward other types of taxes. This is indicated by the following comparisons:

Percentage of educational funds from property and other taxes

Year	Property tax	Other taxes
	<u>Percent</u>	(Sales, excise, etc.) <u>Percent</u>
1929-30	84	16
1943-44	65	35
1953-54	53	47

At the same time the trend has been for more financial support to come from State and Federal sources as indicated by the following table of comparisons.

Financing of education by government tax sources

School year	Federal	State	Local	Total
	(Millions of dollars)			
1929-30	\$7	\$354	\$ 1,728	\$ 2,089
1943-44	36	859	1,709	2,604
1953-54	161	2,923	4,787	7,870

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SCHOOL DISTRICT ORGANIZATION

What Is the Trend in the Number of School Districts?

The number of school districts has rapidly declined during the past 25 years, more rapidly in recent years than earlier. Between 1948 and 1955, the number of districts decreased by more than 41 percent. Since 1953 at least 11 States have passed laws to close nonoperating school districts. This trend will probably continue.

The number of one-teacher schools also followed a downward trend. In 1954-55, 39,061 one-teacher schools operated, as compared with 148,711 in 1929-30.

What Are the Trends in Size of School Districts?

The majority of school districts in the United States are small. A major problem for school administrators is to do well by the small schools -- to help them provide commendable education or else to reduce their number.

The number of districts offering both elementary and high school opportunities will probably not increase very much. The number of such districts is already larger than necessary, according to material prepared by the committee for the White House Conference on Education in 1955. The number of districts offering only high school education is decreasing and may continue to do so.

What Is the Status of the County Unit School District?

The county unit school district first took hold in the South in the early days of the 20th century. It has developed gradually. The advisability of county unit districts is open for debate. Some think the county unit neglects the community aspects of school organization, but an increase in the number of such districts has come about. In 1955 a total of 1,134 county school districts existed in 32 States. Since 1948, the number of county unit districts has increased by 175.

What Has Happened to Reorganization of School Districts?

An accelerated rate of school district reorganization has occurred during the past decade. No less than about 18,000 neighborhoods and communities have reorganized in the 1945 to 1955 (fiscal) period.

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CHANGING ROLE OF EDUCATION

When studying educational facilities provided by a community, it is necessary to consider what is being taught and how it is being taught, as well as where and by whom.

What Are the Trends?

1. The function of schools is now considered to be to fit pupils for life in the modern world, as well as to provide literacy.
2. Education is no longer considered complete at a certain age but is seen as a continuous lifetime process and an essential part of personal development.
3. Recent change in elementary school curriculum has been enrichment of content and change of emphasis rather than the addition of new subjects.
4. In secondary schools there has been decreased emphasis on mathematics and ancient languages and major change in content in the arts, social studies, commerce, science, and vocational education.
5. Most recent development in both secondary and elementary schools has been the increasing emphasis, new content, and orientation in the field of social studies. Society and its institutions are currently considered part of man's environment and consequently of parallel importance to the physical world.
6. The long-range development in public education is the emphasis on utility. Example: Practice polite conversation instead of reciting "pieces"; study how to keep well instead of physiology.
7. Schools of today have a greater awareness of the individual. Testing programs are much in use. "Guidance" is a recognized function of the teaching staff. Secondary school courses are diversified to provide programs tailored to fit individual needs.

8. Learning solely by memory is losing favor to the system whereby students are taught to learn, think, and understand.
9. There is a growing concept that the schools have an obligation to serve the whole community rather than the 6 to 18-year-old group. The staff and facilities of many schools are being used for adult classes and as community recreation centers.

What Do These Changes and Trends Mean?

1. If schools are to fit pupils for life in a modern world, curriculum must be constantly reviewed and changed to keep it up to date. For example: As opportunities for rural boys to enter farming decrease, other types of vocational training may need to be offered in rural secondary schools.
2. When teaching emphasis is placed on individual rather than mass instruction, more teachers and more specialization of teachers are required, and also more classroom space.
3. Part of the increased cost of education in the United States can be ascribed to curricular and pedagogical changes. So long as national income remains high, added costs will be absorbed by an informed public. Should income drop, there will be need to evaluate curriculum and methods to assure that real essentials for modern living are not eliminated as frills.
4. The broadened community concept may mean extra staff or extra pay for the existing staff, as well as increased operating costs.

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OUT-OF-SCHOOL EDUCATION FOR YOUTH

Not all of the education of American youth is done by organized schools. Development of skills, leadership qualities, citizenship, and ability to get along with others frequently occurs in out-of-school activity provided by such organizations as 4-H Clubs, Scouts, Camp Fire Girls, YWCA, and church-sponsored young people's groups.

Paid professional direction is usually provided, and actual leadership is carried out by volunteer workers.

The scope and success of any of these groups depend upon the number and quality of the volunteer leaders.

Assuming that out-of-school educational activity is desirable for young people, any community studying its educational facilities would want to determine the needs of its youth in terms of organized groups and how adequately they are being met.

1. What groups are available?
2. What percentage of the youth between 10 and 19 are participating in existing groups?
3. Should existing groups be expanded?
4. Are there volunteer leaders for existing and new groups?
5. Is there a need for different groups?
6. What are the future needs?

Youth 10 to 19 in the United States

	<u>1950</u>	<u>Projected 1960</u>	<u>Increase</u> <u>Percent</u>
Urban	12,298,660	17,378,045	41.3
Rural nonfarm	4,922,610	6,912,790	40.4
Rural	4,599,455	5,183,765	12.7

The foregoing figures indicate that, even if the youth from 10 to 19 were now being served by out-of-school activity, present professional and volunteer leadership would be inadequate by 1960.

How can communities achieve adequacy and continuity of leadership for their youth programs?

ADULT EDUCATION

What Is Meant by the Term Adult Education?

Adult education embraces the learning achieved by adults during their mature years. Our democratic society has made it possible for all children and youth to mature by acquiring the "common learnings" --the learnings that are common to all through our schools. For adults whose major occupation is no longer that of going to school or college, compulsory education gives way to a type of education in which each learner seeks his own way of maturing. Adults are faced with the need to reexamine what they have learned because the world they live in is constantly galloping into newness. They find it necessary to rethink the "facts" they learned in their school years and to become informed on new "facts." This process becomes the adult's own personal adventure in reeducating his formerly educated self. This is adult education.

What Are the Main Trends in Adult Education?

Formal and informal adult education are important forces in the lives of more people than ever before. In 1950 it was estimated that approximately 30 million adults belonged to various informal educational groups and organized classes in the United States. This number is equal to the number of children and youth in all types of education. The U.S. Office of Education estimates that public schools provide some type of education for 3 million adults and out-of-school youth. Nearly 7 million families are reached by the Agricultural Extension program at present. The Agricultural Extension Service is the outstanding example of an adult education agency operating with a large professional staff (over 12,000 professional workers); it is a unique experiment in a cooperative educational program in which Federal funds play an important part in stimulating and supporting programs initiated and controlled at the State and local level.

In a national public survey, more than two-fifths of all adults questioned said they were interviewed in securing further education. As the average educational level of the population increases, the demand for further adult education increases. Approximately, three-fourths of all school districts with a population of 2,500 or more provide some kind of educational activities for adults and out-of-school youth. The rapid progress in school district reorganization in recent years can be expected to accelerate the growth of adult education, especially in rural areas.

What Adult Education Services Are Available in Local Communities?

Adult education services in local communities are varied and numerous. In most communities there are many planned adult-learning situations available through the efforts of the schools, churches, various local voluntary groups and organizations, civic clubs, and various special-interest groups and organizations. Some of the social systems and organizations which have been found to have rural adult educational programs and activities in many communities are as follows:

Schools

Library

Cooperative Extension Service

University extension

Farm organizations

Farmer cooperatives

Churches

Community and neighborhood study groups

Civic and service clubs:

Lions, Rotary, Kiwanis, Optimist, Altrusa, Quota,
Federated Women's Clubs, Business and Professional
Women's Clubs, American Association of University
Women, League of Women Voters, Parent-Teachers
Association, chambers of commerce, garden clubs
and so forth.

Government agencies:

Farmers Home Administration, Soil Conservation Service
Rural Electrification, and others.

In urban communities there are additional adult educational services available. Many industrial organizations provide for their employees' educational and training opportunities, which range from strictly vocational to broad general programs. Both public and private schools offer adults comprehensive programs that range from technical or vocational to very general and cultural educational opportunities.

Adult education is sprawling and amorphous in most communities. It is sprawling because it is the function or one of the functions of widely diverse agencies, organizations, and groups. It springs from an extensive range of human interests and needs which contributes to its amorphous nature and its lack of an integrated focus. Comprehensive adult education should serve the interests of entire communities. Therefore it is too large for any one agency or group and requires the coordinated planning of many organizations.

What Remains To Be Done To Further Improve Adult Education?

Education for adults is emerging. It will need to be education for all persons with its focus on the face-to-face groups and local communities. Some of these groups need to be effectively related to successively larger action groups such as county or State groups. Although not all needs are met by the existing systems and organizations, more immediate progress can be made by working through existing organizations rather than by launching new ones.

In general the more rural the area, the more limited it is in adult education facilities. Local units require a minimum population and economic base in order to have an adequate adult education program or service. In order to operate adequately, local areas with less than this minimum need to develop cooperative relations with larger units.

Effort must be made to make the best use of existing opportunities. Agencies, schools, and organizations should use each other's resources and coordinate their efforts. New programs need to be encouraged and existing programs expanded. Program planning needs to be facilitated so that more of the needs of adults and of community life are understood and met. Adult education in general could be more effective if those who are responsible for it could have training in appropriate organizational skills and educational methods. Leaders involved in adult education need professional training, coupled with in-service training. At present, too few leaders are sufficiently trained in these fields.

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LIBRARIES

The Role of the Library in American Life

According to the American Library Association, "The public library is one of America's great contributions to civilization. It endeavors to make easily accessible to people of all ages and all levels of educational attainment the best of the world's knowledge as recorded in print, and guidance in its use. At its best, it serves the cultural, educational, and leisure-time needs of the community without compulsion, censorship, or bias, at low cost." 1/

There are many different types of libraries. Some of them are private; the majority are supported in whole or in part by some unit of government. They range all the way from the traveling library, or "bookmobile," serving the rural areas, to the large city, State, and Federal libraries. Some of them are highly specialized, such as the public school library. Others cater to the needs of all the citizens.

Trends in Library Service

Library service is being consolidated and integrated.--One of the most important trends in recent years is the consolidation and unification of library services over a county or multiple-county area. Frequently, as where the population is sparse and the tax base too limited, the countywide library or regional library (consisting of two or more counties) is the only feasible means of providing minimum library service. Many of these systems are affiliated with and partially supported by a State library commission. They frequently involve bookmobile service, deposit stations, and branch libraries to meet the needs of all the people in the area.

Libraries are expanding their services.--In addition to books, newspapers, and magazines, many libraries are now stocking record albums, phonographs, films, slides, and projectors. An increasing number of them maintain community rooms for use by organized community groups. Some libraries sponsor lectures, exhibits, and study programs for children and adults.

Present Standards of Library Service and Future Needs

Adequate library service is not yet readily available to all rural people. Close to one-sixth of the counties have no public library service.

Per capita expenditures for rural public library service are still far below the minimum standards established by the American Library Association.

1/ A National Plan for Libraries, American Library Association Bulletin, February 1939, as reported in Lowry Nelson, Rural Sociology, p. 424.

With more leisure and with the increasing complexity of modern life, the importance of the public library as an educational, cultural, and recreational institution has greatly increased.

Do the library facilities in your area meet minimum standards?

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Health

Today community health services embrace a wide variety of facilities, personnel, and programs which contribute not only toward medical care, but toward promotion of health and prevention of disease and to what is done beyond the treatment of disease, namely, rehabilitation.

The physician is no longer the sole source of health attention but is a member of a health team along with many other resources which through joint endeavor can and are providing better health service than we have ever known before. But this endeavor takes cooperative planning and action all along the line, including the people themselves. This is not only a challenge to the future but a situation in which much gain has already been achieved in the last 15 or 20 years.

Progress and Change Feature the Current Overall Picture

A decade hence we will be living in a more crowded world, with larger proportions of young people and of old people, a more mobile and richer world, a world of astounding technological advancement, a world of more complex social structure and more rapid tempo of life. These give a hint of the changes that will occur affecting both personal and community health.

Dramatic gains have been made in health during the last 40 or 50 years. Life expectancy has risen from 48 years to nearly 70 today. Infant mortality, a major index of public health well-being, has dropped from 60 to 1,000 live births to only 24 by 1950. Hospitals providing 275,000 additional beds have been built since 1945, and many health centers and public health units have also been established or improved. Total expenditures for health have risen nearly fourfold since 1930 (current dollars). Private health organizations and programs have greatly expanded. Immunizations and vaccinations are more commonly accepted practices than ever before. About 1,200 communities now fluoridate their water. Research has produced almost miraculous achievements in the development of new treatments, preventives, and controls. People are more health conscious than ever before. But we still have a long way to go in almost all of these respects, and the situation in rural areas is generally behind the urban.

What about community health services today - kinds, extent, trends, standards?

Physicians.--In 1953 we had in the United States about 152,000 active physicians in private practice, making an average of 1 physician to about 1,100 population. Based on this national average, figures of 1 physician per 1,200 population in cities and 1 per 1,500 in rural areas are often used as desirable current standards.

But, of course the major problem is that many rural areas have only 1 physician per 2,500 to 3,000 population and some counties have only 1 per 5,000 or none at all. This represents far fewer physicians than we had in rural areas 30 to 40 years ago, but service is more effective today because of technological advances in medicine, including more treatment in the doctor's office instead of in homes. The doctor used to do the traveling, but now the people who desire the service travel for it, and distance is less important than it used to be.

A basic factor is that physicians tend to be found in the sizable towns and cities where other health facilities are available and also more suitable living conditions for their families. Some rural counties having a low physician ratio may be nearer a city in another county where several physicians are located. This may provide sufficient service, if there are enough physicians to serve both the local community and the surrounding trade area. Studies indicate that the farther away physicians are the more tendency there is for families to use them less than they should for good health.

It has been estimated that we will need 22,000 to 25,000 more physicians by 1960 than the predicted supply by then, just to maintain the present physician-population ratio. Counties and communities have done and can do various things to assure better physician service, including not only recruitment but improved physician-community relations and more planned family use of the physician.

Dentists.--A somewhat similar situation to that of physician service also prevails for dental service, except that fewer dentists than physicians are normally required for adequate service. A figure commonly used as a desirable standard is about 1 dentist per 2,000 population.

Nurses.--In many areas the shortage of nurses today is critical. In 1952 we had about 335,000 active registered nurses. The national average and generally accepted desirable current standard is about 1 nurse for a population of 450 to 500, but in many areas the actual average is less than half of this, or 1 registered nurse per 1,000 population or more. Nonprofessional nurses, of which there are many thousands today, are helping to meet the shortage of registered nurses. Local areas are doing much to alleviate the problem, especially by recruitment of both professional and nonprofessional nurse prospects and by providing volunteer service. More pay and improvement of nurse-community relationships would also be helpful factors. The shortage of registered nurses for the country as a whole in 1960 may exceed 50,000.

Auxiliary health workers, such as laboratory and X-ray technicians, dieticians, therapists, social workers, clinical psychologists, and sanitarians and other public health personnel are also all in considerable shortage at present. And they are increasingly important because of the advanced technology of medical care, treatment, and prevention. Adequate veterinary service is also important to human health, for several important animal diseases are transmissible to man.

Public health services.--For this category there is only one acceptable standard and that is some type of full-time public health service under competent direction. By January 1954 the situation in the United States was as follows:

<u>Type of service</u>	<u>Number of counties</u>	<u>Percentage of total population</u>
Single county full-time unit	783	33.6
Multiple-county full-time unit	272	9.0
City full-time health unit	227	29.1
State health district full-time service	947	17.0
Without full-time public health services	839	11.3
	<u>3068</u>	<u>100.0</u>

Most of the counties in the last two categories are found in the States west of Minnesota, Iowa, Missouri, Arkansas, and Louisiana. Number of units is only part of the story; another factor is their quality as to personnel and programs. Shortage of public health personnel is a problem.

Expenditures for local public health services increased from 29 million dollars in 1929 to over 150 million by 1952. About 71 percent of the 1952 expenditures came from local sources, 18 percent from the States, and most of the balance from Federal agents. 1/

Full-time public health services commonly include immunization programs, health education, sanitation planning, enforcement of protective health standards, child health clinics, mental health clinics, control of epidemics, school health, dental health education, and other health protection and promotion programs.

Hospitals.--tremendous progress has been made in hospital construction throughout the United States since 1945, much of it having been spurred by the enactment of the Hill-Burton Hospital Survey and Construction Act. Since then over 2,000 hospital construction projects have been completed, many of them being 50 to 100-bed hospitals in towns serving wide rural areas.

A figure commonly used as a desirable standard for adequacy of general hospitals is 4.5 beds per 1,000 population. Many counties now come up to this standard, but there are still numerous rural areas that have only 3 beds or less per 1,000 and sometimes these are far away. However, extent of need today in some sections depends greatly upon travel time and upon whether there are more than adequate services available in adjoining counties. In Public Health Reports, January 1956, the U.S. Public Health Service says that obsolescence and the continually mounting population make it hard to catch up on hospital beds, and that still today we have only 73 percent of what is needed of general hospital beds, only

56 percent of mental hospital beds, and only 14 percent of chronic disease beds. About 15 percent of all present hospital bed space is not acceptable by Public Health Service standards, because of overcrowding, poor condition, and other factors.

Amendments to the Hill-Burton Act were made in 1954 authorizing additional appropriations to aid States and communities in the construction of diagnostic centers, chronic disease hospitals, and nursing homes with medical care. The first two mentioned are more or less of State nature, but nursing homes where adequate medical care can be provided for chronically ill cases who do not require complete hospitalization are much more a local need and also homes for aged people. In some places counties or other local groups have already started plans for the development of such centers.

Besides having adequate, reasonably accessible hospital services available, other important factors are that the people know about them and make proper use of them. Wise planning of further construction is also essential in order to assure good location, proper size, adequate financing for operation, and other factors.

School health.--What about health conditions in the local schools? Are there adequate arrangements for cleanliness, sanitation, and safety? What about education for health in the school curricula and activities? What is the situation in regard to school nurse services and physical examination of pupils? How much do the parents know about the school health programs in which their children are concerned? Is there a school lunch program, and how is it working? What about relationships of various health resources to school health matters?

One significant trend in school health during recent years is a broadening concept of what a good school health program for any given situation ought to be, including especially more health education or training in the classroom, and a broadening of the program beyond physical education and athletic teams.

The expansion of electricity and other developments have helped to improve school sanitation, heat, light, and other conditions. The expansion of local public health services has also helped to bring about better school health programs and services. In many areas local parental and civic organizations have taken increased interest in school health. But there is still much to do in this whole important area of public health.

Health insurance.--A major problem in the improvement of health is its cost. "The growth of voluntary health insurance has been one of the most significant social developments of the last decade" -- to help ease the burden of high medical care costs. The availability of adequate health insurance programs, and the enrollment in them of rural people, are important considerations in the field of community health services.

Today about 60 percent of the total population is covered by some form of prepayment health insurance, but studies show that this is much less in rural areas. Do people know what to look for in buying health and accident insurance? Do they know what they have in their present policies? Many rural people are covered because they are employed in industries which provide at least some form of health insurance. But many others are not covered, especially full-time small-scale farm operator families and other rural self-employed people.

Voluntary health agencies.--Such voluntary agencies as the American Red Cross, American Cancer Society, American Heart Association, National Tuberculosis Association, National Foundation for Infantile Paralysis, National Society for Crippled Children and Adults, and many others, now have State and local chapters or representatives. They usually are an excellent source of health educational information on specific problems, and some also provide care programs for special cases. The important thing to consider in program planning is the question how to best cooperate with these agencies in a practical, systematic manner on programs and activities of common interest. Another question is to what extent do rural people know about these programs and how to use them or refer others to them when needed.

How about planning and financing community health services?--The main rule is to consider present health conditions and situations with respect to the foregoing and other points, then to decide on what conditions you would like to have prevail in relation to your situations. The next steps are to map out the services and programs or improvements needed to reach your objectives and to decide how you will undertake them.

Overall county organization and planning makes possible such analysis, including consideration of health services in relation to other community services and problems, such as schooling, roads, recreation, and agricultural marketing. There is a definite trend toward more county and community group action in improving health services, including the financing of them. But this has to be done in relation to all programs and problems of the State and county. Much can be and is being accomplished in various places through such cooperative planning and action.

What are sources of vital statistics and other information on community health services?--Main sources might be the State and county or district public health and public welfare departments, State and county medical and dental associations, hospital establishments, schools, and voluntary health and welfare organizations. Individual physicians, dentists, nurses, and public health officials may also be helpful.

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Recreation

"The value and importance of play in people's lives is one of the great discoveries of this generation. . . . Adequate recreation is essential to people of all ages--children, youth, working age, and aged people."
-- C. C. Taylor.

Will Provision for Adequate Recreation and Wise Use of Leisure Be More or Less Important in 1956?

Some reasons why it will be more important and related trends are:

1. Shorter work periods ahead. The average nonfarm employment week declined from 50 hours in 1925 to 40 hours and is expected to be 35 hours and in many cases a 4-day week by 1960. The burden of farm and home work is lighter than ever before and will probably become more so in the future. The shorter times required for many farming tasks make possible shorter work weeks, family trips, and more community activity.
2. Most population growth will be among the youth and over-60 age groups, which are the people having the most need for recreation, anyway.
3. Increased concern with the part recreation plays in meeting needs of children and youth to help control delinquency.
4. Recreation and wise use of leisure are looked upon with much more favor by rural people today than a generation ago.
5. Public expenditures for recreation facilities and programs have increased 300 to 400 percent in the last 20 years. There is a definite trend toward more cooperation between town and country agencies and between agencies and groups in recreation planning; also more on a county-wide basis.
6. Less dependence on commercial recreation activities and more interest in participation types of leisure activities.

The money spent for recreation today is enormous. It was about 11 billion dollars in 1950 for local recreation activities, supplies, movies, and other entertainment, and it was 30 billion dollars if one includes vacation travel, meals, gasoline, sports clothes, soft drinks, and other general recreational related items. This is nearly 4 times what is spent for medical care and 2 times the value of all housing rental value for a year. Weekly attendance at movies was 54 million in 1950.

However, the spectator-type recreation is not enough. The participation-type recreation is far more desirable for both health and personality development. This trend is reflected in the increase in intramural sports in schools, in social activities as a part of organization programs, in the demand for reading and musical materials, and the like. The home shop and

"make it yourself" boom is also a new development that has recreational value for millions of families, and it will more likely increase than decline. It has both home and community aspects. About \$50 million worth of home tools were bought by families in 1952 as compared with only \$6 million in 1947. Expenditures for flowers, seeds, and potted plants by home gardeners increased from \$211 million in 1940 to nearly \$700 million in 1950. Interest in arts and crafts has greatly increased, especially among youth and aged groups.

What Does Recreation Do--Its Purposes and Benefits.

It adds zest and fun to living, enlivens the human spirit. It provides wholesome, constructive use of leisure. It helps develop human personality and leadership. It provides a means of group participation. It strengthens family life. It increases interest in organizations, improves programs and meetings. It builds character, sportsmanship, democracy. It relieves tension, promotes mental health. It helps produce group unity and community spirit.

How Adequate Are Community Recreation Facilities and Opportunities Today?

This is the main question for local decision. Three factors enter into community recreation services: (1) Facilities, (2) programs, projects, and activities, and (3) leadership.

In regard to facilities, the important thing is to have adequate and attractive meeting halls, playgrounds, and parks. School facilities are often used and can be arranged for community use. Churches often provide much for community recreation use. Ball fields and courts for tennis, volleyball, shuffleboard, and other games are important and also a safe place for community swimming. Many rural areas lack almost all of these facilities.

The main thing about programs is to provide adequately for all ages and interests, but especially for youth and aged people. Summer playground programs are becoming more common. A broad school recreation, education, and activity program is better than merely physical education and athletic teams. Many organizations are adding social activities to their programs. Much recreation can be provided through youth organizations. Art and craft groups, hobby shows, Golden Age clubs, and the like are becoming more common.

Leadership is essential--paid and voluntary. Most areas have good potential leadership resources; they just need to be located and used. Various agencies can help.

However, not all desirable community recreation facilities and programs can or should be provided in or by every individual small community. Much depends upon the population to be served, the size and type of school

system, and nearness to other places. The important thing is that rural people should have reasonable access to most facilities and opportunities for wholesome recreation, if not on a community basis, then at least in every county or two.

County-wide recreation planning is becoming more and more important owing to the trend toward wider community contacts. People in county seats are thinking about surrounding rural areas and their needs. There is a definite trend toward public recreation financed by county or city governments either through the school system or through the establishment of a public recreation department. A problem in the public financing of recreation is that it sometimes places the program in competition with other public needs, such as health facilities, roads, and schools. The main thing in this regard is to keep a balanced view in order that all needs may be adequately met as progress is made through the years. The population and economic trends of the area are important factors to consider, as well as timeliness.

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Communication and Transportation

Rural communities have made tremendous progress during the last 5 years in improving their communication and transportation services. Nevertheless, many of them, at least, have a long way to go before the isolation of farm life can be completely eliminated, before out-of-school educational opportunity in rural areas is equal to that in towns, and before transportation difficulties are eliminated as barriers to economic progress in rural communities.

Most farm families now have daily mail service. Probably more than 80 percent of them subscribe to a newspaper. However, only half of them had telephones in 1950.

About 92 percent of them had radios in 1950. About 42 percent had television in June 1955, as compared with only 3 percent in 1950. (Seventy-three percent of urban families and 61 percent of rural nonfarm families had television in June 1955.)

About 75 percent of farm families had an automobile or truck in 1950. However, one-third of them lived on a dirt or unimproved road, and only 32 percent lived on a hard-surfaced road. Fifty-two percent were more than 4 miles from the trading center visited most frequently. Some rural communities are more dependent on private transportation than formerly because rail or bus lines have been changed or eliminated.

The seriousness of communication and transportation problems seems to vary greatly from community to community and from region to region. It seems to be very closely associated with low farm incomes and with sparsity of population. For example, telephones were found on the smallest percentage of farms (less than 10 percent) in 1950 in large areas in the Southeast where farm incomes are very low and in scattered areas of the Great Plains and Rocky Mountains where population is sparse.

The degree to which farm people make use of such media as newspapers, magazines, radio, and television, and the kinds of uses they make of them, seem to vary also by educational levels. This is indicated by several Extension studies of the media through which farm people get information and ideas.

These relationships seem to indicate that the problem of communication in many communities is linked with the problems of education and of the total economic development of the community and the larger area.

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Welfare

WHAT IS MEANT BY THE TERMS "WELFARE" AND "WELFARE SERVICES?"

Welfare, in the sense used in this statement, refers to those activities, procedures, and organizations in a community which are set up to assist individuals or groups in distressed circumstances. Welfare activities are directed toward meeting certain basic needs of people. Circumstances which account for this need would include the following: Old age, youth, unemployment, disability, retirement, and illness. Welfare services may be provided by public agencies, or by private voluntary organizations (including churches), and individuals. Some of these services may be directed toward meeting present needs, while others provide for needs that may arise in the future.

WHAT ARE THE MAIN TRENDS IN WELFARE?

Increased Activity by States and the Federal Government

In earlier times welfare was primarily the concern of the individual, his family, and to a lesser extent, private philanthropic organizations and the local community. In relatively recent times, particularly since the great depression of the 1930's, State and Federal Governments have assumed greater responsibilities for welfare programs. Whereas in 1930, close to 50 percent of all welfare expenditures (excluding public health and medical services) came from private sources, in 1950 the percentage from private sources had dropped to 27 percent. The volume of expenditures for such purposes, however, increased for both the private and the public agencies.

Increased Expenditures for Welfare Purposes

Welfare expenditures from both private and public sources have increased greatly and will probably continue to increase in the years ahead. From a total of about \$3 billion in 1930, public and private welfare expenditures increased more than sixfold up to 1950. Private welfare expenditures increased from approximately \$1.3 billion to \$4.5 billions during this period. Likewise expenditures of public agencies jumped from \$1.8 billion to \$15.4 billion. In proportion to national income, however, the increase was not as marked--from 4.1 percent of the total national income in 1930 to 8.3 percent in 1950.

Change in Popular Attitudes Toward Welfare

Welfare was originally thought of as charity to a considerable degree. Since the depression of the 1930's, there has been increased recognition of society's responsibility for the total welfare of its citizens. Welfare goals are now much broader and more comprehensive than they were formerly.

In addition to the mere relief of distress and misery, welfare now includes programs to eliminate or reduce the causes of distress, and to rehabilitate whenever possible, individuals who can again become productive members of the community.

The Insurance Principle

The principle of protecting an individual against some future loss, as in fire insurance, has been carried over to the field of welfare. Welfare now attempts to take account of the future needs of people. It does this through social insurance programs such as old age and survivors insurance. A considerable part of the greatly increased public welfare expenditures are in the form of benefits from such programs. Further expansion of this phase of welfare can be expected in the future.

Greater Coordination of Private Welfare Activities

In an effort to make private welfare programs more efficient, welfare agencies in many communities have coordinated their fund-raising drives. The number of Community Chest campaigns increased from 240 in 1925 to 1560 in 1953. Further expansion along these lines can be expected in the future. In some areas, the coordination of welfare agencies is being extended to encompass areas larger than the local community, sometimes an entire county.

Increased Participation by Industry

There has been a rapid development of welfare activities carried on by private industry. Of particular importance has been the great increase in health, welfare, and retirement plans. These programs supplement those of the State and Federal Governments.

Increased Recognition of Rural Welfare Needs

Welfare activities in the past tended to be concentrated largely in urban areas. During the last 25 years, however, welfare services of all kinds have been extended to include the rural population. The hazards of unemployment, old age, disability, and other causes of distress are not restricted to urban areas. The inclusion of many farm people under the social security program is a recognition of this fact.

Increase in Number and Quality of Professional Welfare Workers

The carrying on of effective welfare programs requires an ever-increasing number of individuals trained in the welfare field. This is particularly true of programs aimed at rehabilitation.

WHAT WELFARE SERVICES ARE AVAILABLE IN THE LOCAL COMMUNITY?

Many kinds of services, both public and private, are now available to people in rural communities all over the country. Some of those most commonly found are listed below. Some of these involve financial assistance, while many of them provide a service to people in need, such as medical attention and educational information.

Aid for dependent children	Education and religious services for special cases in need
Aid for the blind	
Relief for needy families	Unemployment compensation
Care of old people	Workmen's compensation in case of accident on the job
Employment service	Special care for polio, cancer, and other cases in need
Care of orphans	
Aid for crippled people	Benefit payments under social security insurance programs
Aid for mentally handicapped	Maternal and child health care
	Emergency care (disaster relief, etc.)

WHAT NEEDS TO BE DONE TO FURTHER IMPROVE THE WELFARE PROGRAM?

While considerable progress has been made in the last 25 years, the needs of many rural persons are not being adequately met. In some cases, funds for welfare purposes are too limited. In other areas, more trained professional welfare workers are needed to carry on counseling and other necessary activities. How adequate are the welfare services in your community?

The coordination of all welfare activities, both public and private, should be encouraged and increased. What can be done to promote further coordination?

If efficient and proper use is to be made of existing welfare services, there must be increased awareness among all people of what services are available. Such knowledge would also encourage the development of additional services to meet newly recognized needs. What specific services are now readily available to the people in your community? Are the people well informed?

Changes in our economy and in our population will require constant appraisal of our welfare services. As the proportion of persons 65 and over increases, special attention to the needs of this age group will be required. Likewise, as certain industries decline, and as new areas develop, the need for vocational rehabilitation and counseling will increase. What is happening in your community?

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April 1956

Program Projection Series

REPORT NO. 5 - COMMODITIES

5a - Meat Animals

5b - Dairy

5c - Poultry

5d - Cotton

5e - Grains and Forage

5f - Fruits, Vegetables, and Potatoes

5g - Forestry

DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Program Projection Report No. 5a

Meat Animals

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Meat Animals

PAST TRENDS

Production

Historical background.--In the battle for survival, cattle, sheep, and goat herders were constantly forced to retire to less productive lands before an ever-increasing pressure for more intensive use of land resources as population increased. The past three decades have been marked by a significant reversal of this trend as beef cattle staged a comeback in the older agricultural regions. Important factors in this development include technological advances in animal husbandry, pasture and feed crop culture; acreage released from the production of food grains and cotton; and an awakening to the urgency of soil conservation. Along with this transition have come problems in marketing and adjustments of supply to demand which directly concerns the economic well-being of livestock producers.

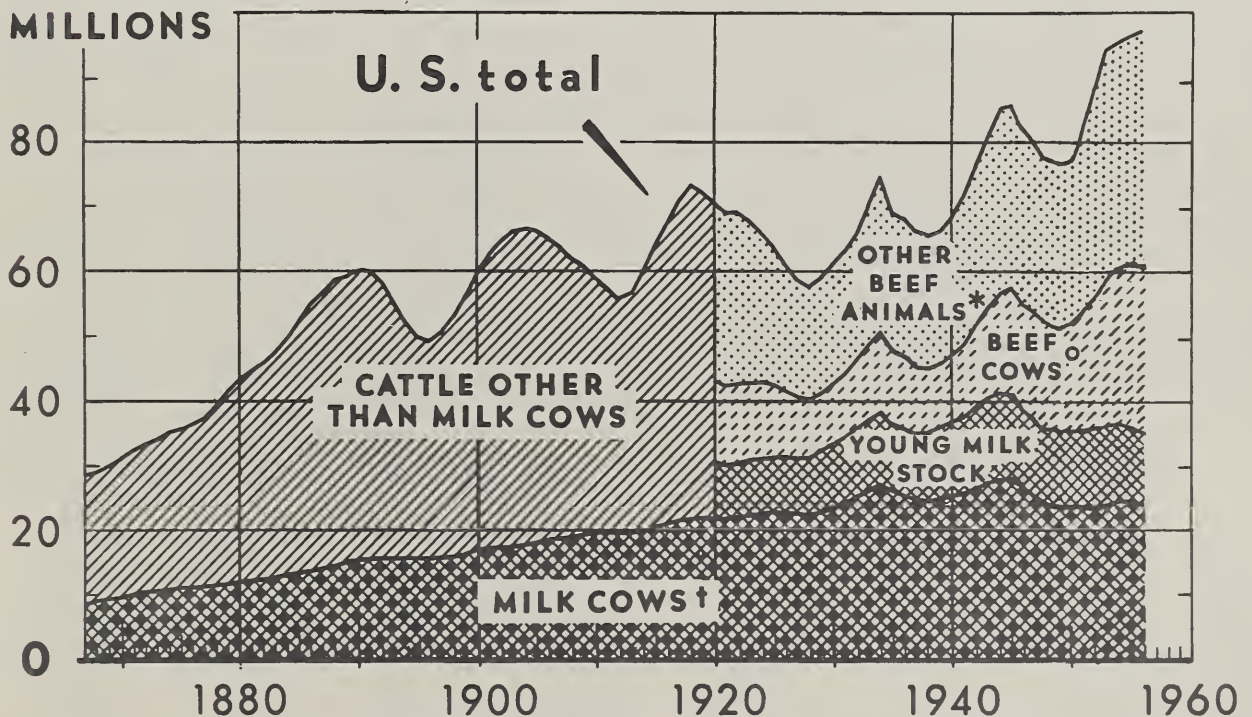
Beef cattle.--The beef cattle population has completed five cycles since 1880 and is now at the peak in the sixth cycle. Each cycle has generally been characterized by a peak and low point higher than the preceding cycle. The trend is borne out by comparing the 1885 cattle and calf population of 52,463,000 with the January 1, 1956, figure of 97,465,000 head. In recent years, this long-range trend has been characterized by a wider ratio in numbers of beef cattle as compared with dairy cows. Many changed relations have been noted within the broad outlines of each cattle cycle:

- (1) When cattle numbers and prices are rising, breeding stock are in demand, but their prices outrun the general advance. Later, when cattle prices decline, reductions are greatest for the same classes.
- (2) Low-grade cattle command relatively high prices when cattle are scarce, but are sharply discriminated against when cattle become plentiful.
- (3) When cattle are profitable, interest is great in cow and calf producing programs, owing to the strong demand and high price for calves. Periods of declining cattle prices are especially severe on calf prices, resulting in less interest in cow and calf operations.
- (4) The differential between rises of feeder and fed cattle narrows during periods of rising cattle prices. When prices decline, feeder cattle prices are reduced proportionately more than those of fed cattle. This is usually accompanied by increased interest in feeding cattle.

Some of the more significant shifts in beef cattle production during recent years include:

- (1) Decline in breeding cow numbers in the semiarid regions of the Southwest and Southern Great Plains due to extended droughts.

- (2) Increase in cow-and-calf production throughout the old Cotton Belt as new enterprises have been sought to utilize acres diverted from cash crops.
- (3) Increase in number of small beef breeding herds on farms in the Corn Belt, upper South, and some Northeastern areas.
- (4) Development of feeder calf production areas in the Southeastern States.
- (5) Establishment of feedlot operations in many new areas. This has been especially significant in the Pacific Coast States, which now finish approximately a fourth of the total number of cattle fed out in the United States.
- (6) Greater use of small grains and silage in fattening cattle for slaughter.
- (7) Introduction of diethylstilbestrol in steer feeding rations.



* HEIFERS & CALVES NOT FOR MILK, AND ALL STEERS & BULLS 2 YRS. & OLDER NOT FOR MILK
 † COWS & HEIFERS 2 YRS. & OLDER FOR MILK DATA FOR 1956 ARE PRELIMINARY

U. S. DEPARTMENT OF AGRICULTURE

NEG. 430A-56 (2) AGRICULTURAL MARKETING SERVICE

TRENDS IN U.S. CATTLE NUMBERS

Swine.--The dependence of a profitable swine enterprise on a plentiful supply of low-cost concentrates has generally restricted major hog production to those areas where corn is an important crop. Output of pork is more quickly responsive to economic conditions than is beef production because hogs can be raised to maturity in a shorter time than cattle. Hog numbers traditionally have been geared to the quantity and price of corn

available. Cycles in hog production are still controlled largely by the corn-hog price ratio. A ratio above average is usually followed by increases first in pigs raised, and later in the number of hogs slaughtered. Prices decline as slaughter increases, and when production becomes unprofitable, hog numbers again decline, to complete the cycle.

The long-range trend in hog numbers has been upward as shown by the following averages of annual United States pig crops for the past three 10-year periods based on data published in USDA Pig Crop Reports (AMS):

1926-35	78,844,000 pigs saved
1936-45	85,206,000 pigs saved
1946-55	90,833,000 pigs saved

Production of hogs has not expanded as rapidly as has the United States human population.

In recent years, there has been a trend away from the short lard-type hogs which were formerly popular. Producers have made some progress toward breeding meat-type hogs, but the absence of price incentive for quality on most markets has not encouraged widespread marketing at the optimum weights for lean carcasses. As a result, hogs are marketed at heavier weights now than years ago, a trend that of itself has increased the proportionate supply of fat pork. Weight of hogs slaughtered under Federal inspection, which averaged 225 pounds in 1921-25, was up to 249 pounds in 1947-51, and has averaged 242 pounds in recent years.

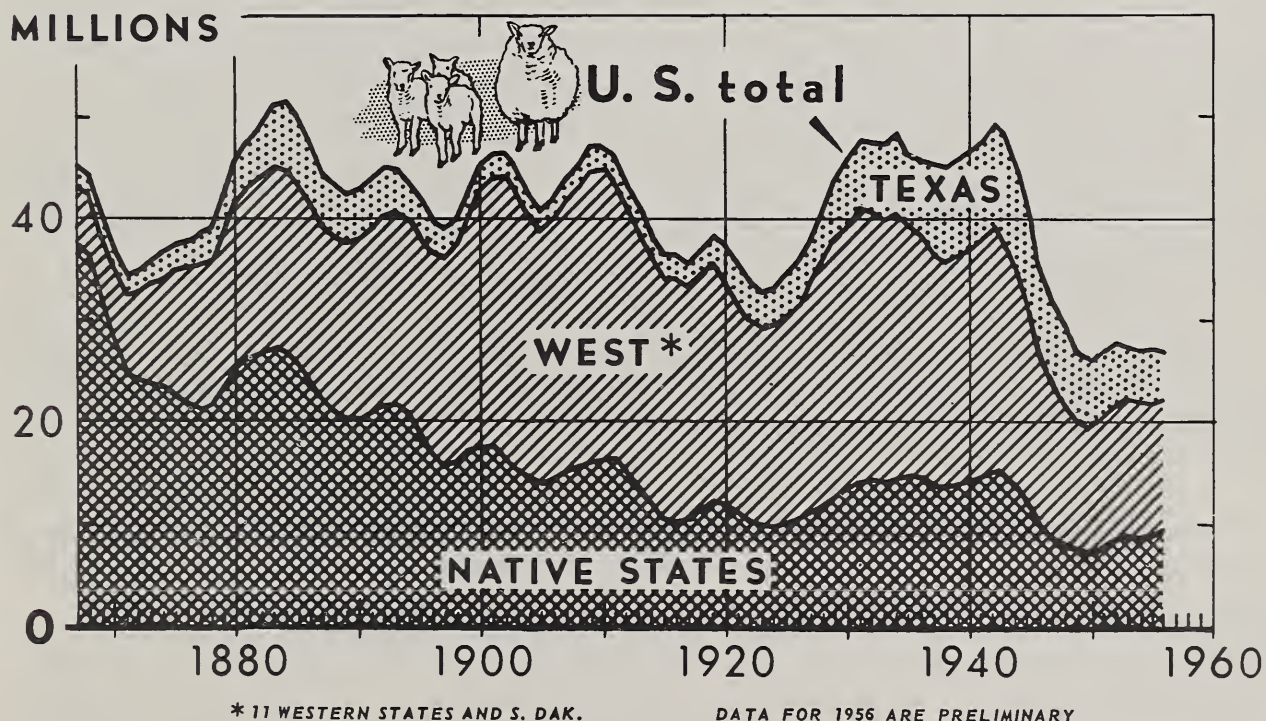
Pig crops: Spring, fall, and total, United States, 1924-55

Pigs saved				Pigs saved			
Year	Spring	Fall	Total	Year	Spring	Fall	Total
	Thousands	Thousands	Thousands		Thousands	Thousands	Thousands
1924	50,218	23,847	74,065	1940	49,584	30,282	79,866
1925	47,859	22,451	70,310	1941	49,368	35,584	84,952
1926	50,579	24,865	75,444	1942	61,093	43,810	104,903
1927	54,502	26,744	81,246	1943	74,223	47,584	121,807
1928	52,390	26,292	78,682	1944	55,754	30,905	86,659
1929	50,479	25,646	76,125	1945	52,216	34,611	86,827
1930	49,332	24,803	74,135	1946	52,191	30,503	82,694
1931	53,984	29,192	83,176	1947	52,199	31,090	83,289
1932	51,031	31,494	82,525	1948	50,468	33,358	83,826
1933	53,460	30,740	84,200	1949	56,969	36,275	93,244
1934	39,698	17,068	56,766	1950	57,935	39,404	97,339
1935	32,884	23,260	56,144	1951	62,007	39,804	101,811
1936	41,422	24,303	65,725	1952	56,270	34,961	91,231
1937	38,525	23,994	62,519	1953	49,703	31,809	81,512
1938	43,289	28,566	71,855	1954	55,667	36,766	92,433
1939	53,238	33,714	86,952	1955	60,453	1/40,500	100,953

1/ Estimate of pigs saved during fall of 1955 based upon the farrowings indicated from breeding intentions reports and an average of pigs saved per litter with allowance for trend. Data published in semi-annual Pig Crop Reports (AMS).

Sheep.--The construction of railroads to the Pacific opened up a vast grazing empire which was well suited for the production of sheep and wool. As a result, sheep numbers in the older States began to decline about 1870 and continued the downward trend until 1951. Western range sheep numbers rapidly expanded until the turn of the century and then remained fairly constant until World War II. The period was marked by general prosperity for the western sheepmen. Demand for wool was strong, and feedlot operators provided a good outlet for range lambs.

The industry began to experience difficulties after the war years as a result of increased competition for grazing land, restrictions on forest ranges, shortages of herders, and reduced demand and prices for wool. As a result, range sheep numbers began a downward trend which is still continuing. Total United States sheep numbers reached a record low level in 1949. In recent years there has developed a renewed interest in farm flocks. Increases in sheep on farms since 1950 have about balanced off the reductions in the range areas.



U. S. DEPARTMENT OF AGRICULTURE

NEG. 431-56 (2) AGRICULTURAL MARKETING SERVICE

TRENDS IN U.S. SHEEP NUMBERS

Efficiency developments.--Technological advances in meat animal production, although probably less spectacular than in the fields of agronomy and horticulture, have been outstanding during the past 15 years. Research attention to livestock production has long been directed toward increasing

output per head. Substantial progress has been made by producers in applying recommended practices in this areas as indicated by the following figures on production per breeding unit expressed by index numbers. The index is expressed in percentage as compared with 100 for the period 1947-49.

1920....68	1950....104
1930....85	1955....110
1940....92	

Until recently, less effort was devoted to increasing the efficiency of converting feed to liveweight gain. As a result, progress in this area has been less apparent than in the output per breeding animal. Research work directed toward development of greater feed efficiency has been greatly stepped up in the past few years.

Outstanding advances have already been made in the following approaches to the problem: Selection of breeding animals possessing a high degree of inherited ability to efficiently convert feed to liveweight gains; development of antibiotics, hormones, and other feed additives to stimulate the growth and fattening processes; development of more efficient rations and supplements; increased knowledge of the digestive processes and rumen microflorae; better understanding of vitamins, amino acids, and minerals.

Rapid advances in mechanization have considerably reduced the man-hours required per productive unit on livestock farms. As a result, the average size of livestock operations has been increasing in order to justify the greater capitalization required per farm unit.

Technological advances in pasture improvements and in the production and storage of hays and silage have made it possible to develop major livestock enterprises in many areas formerly thought of as unsuited to livestock.

Research contributions in the field of animal health have been particularly significant. The timelag between the discovery and announcement of new methods of controlling diseases and parasites and their widespread adoption by producers has been too long, resulting in needless financial losses to the growers.

Livestock Marketing

Technological developments.--The system of marketing livestock today is both large and complex. Technological changes occur constantly, making for increased efficiency of the marketing system. Examples include the refrigerated freight car and motortruck, quick freezing, the chainstore, and mechanization of many of the marketing functions once done by manual labor. Specialization, as exemplified by large Pacific coast cattle operations, is on the increase. The development of transportation in this country has increased the average distance livestock are shipped to market and has allowed different areas to specialize in certain types of production. All these are helping to change the livestock marketing structure in the direction of lowered costs and higher efficiency.

Where livestock is marketed.--The main terminal livestock markets are: South St. Paul and Sioux City, primarily hog markets; Omaha, today the largest United States cattle market; Omaha and Denver, both important sheep and lamb markets; Kansas City, a big feeder cattle market as well as general market; Chicago, the largest general market and handling all types of livestock; Milwaukee, Indianapolis, East St. Louis, St. Joseph, Wichita, and Fort Worth, also important centers.

Formerly, each of these markets had its own source of supply. Surplus stock might be moved from one market to another if prices went too low, but the major markets were kept in a general balance by the buying of the large packing companies operating in several markets that distributed their products locally.

During and immediately after World War I this pattern began to be disrupted by the growth of packing plants in the producing areas. This was brought about by (1) increased freight rates and lower livestock prices, and (2) highway improvements and the introduction of the motortruck as a method of shipping livestock. The net result has been a general decentralization of livestock marketing.

The movement of stocker and feeder animals into terminal markets has more recently been reduced by the growth of local livestock auctions in the Corn and Hog Belts. Livestock auctions, for example, now account for 28 percent of all feeder cattle marketing in the Great Plains States.

Another recent trend that has had a big influence on cattle marketing, particularly in the Western States, is the development of cattle finishing as an industry and the development of western packing plants. Cattle finishing is one of the fastest growing agricultural industries in the Western States. Within a period of a few years it has mushroomed from a position of minor importance to the most important outlet of western feeder cattle. From September 1, 1952, to September 1, 1953, some 2½ million head of cattle, or about one-third of all the slaughter cattle fed out in the United States were finished out in the 11 Western States.

Most of the feeding operations in the Western States were in California which had 43 percent of the total, and in Colorado which accounted for 27 percent of the total. In contrast to Corn Belt feeding operations, where finishing cattle is well integrated into the farm unit, most western cattle finishing is done in large "factory type" feedlots. Some 66 percent of the western finished cattle are fed out in feedlots handling 1,000 or more head annually. And 39 percent of all the cattle finished in 9 Western States are fed out in feedlots handling 10,000 head or more annually.

Approximately two-thirds of western feedlot cattle are sold direct to packers, and one-third are sold through terminal markets. In California, however, 90 percent of finished cattle go directly to packers. Colorado feeders, on the other hand, send only 20 percent of their finished cattle directly to packers, the remaining 80 percent being consigned to commission firms in terminal markets.

How livestock is marketed.--The trend is away from terminal markets toward decentralized markets nearer the production area.

In the South, local livestock auctions are, by far, the most important market outlet for cattle. With a few minor exceptions, more than half of every class of livestock marketed was sold through local auctions in 1950. Local auctions not only serviced the largest number of producers but also handled the largest volume of cattle. An example of the importance of local auctions in the South is seen in hogs, where 50 percent of the producers sold 53 percent of the total hogs marketed through this channel.

Packing plants, local dealers, and farmers were the next most important outlet for hogs. Sales through these outlets, together with sales through local auctions, accounted for 96 percent of all hogs marketed in the region in 1950. Only 3 percent of all hogs marketed were sold at terminal markets. Local auctions accounted for 90 percent of the total sheep and lambs marketed in the major sheep-producing areas of the South.

Because of the lack of volume marketing by any one producer, relatively less efficient marketing channels, and the general lack of quality livestock, southern livestock producers receive on the average 15 percent less for their livestock than producers in other areas of the country.

In the Corn Belt, about one-fourth of the total livestock marketed is moved from farmers to packing plants, other farmers, or other users without passing through an intermediary market. More than 40 percent of the cattle, calves, sheep, and lambs and a smaller percentage of hogs move through terminal markets without passing through any other market outlet. About one-fourth of the cattle and sheep, and nearly one-third of the hogs marketed move through one or more local markets before reaching their final destination.

Seasonality of livestock marketing.--Marketing of livestock varies greatly from year to year and from season to season within the year. This calls for flexibility within the marketing system and places abnormal stress on marketing facilities at certain times of year. Peaks in livestock marketing are caused primarily by seasonal breeding and by termination of the grazing season at nearly the same time throughout the major range areas.

There is more flexibility in the marketing of fat lambs than in the marketing of fat hogs. Sheep and lamb, and cattle and calves are marketed in smallest numbers in February and March and in the highest number in September and October. Hog marketing always goes up in the fall and spring, as spring and fall pig crops mature. Marketing of feeder calves and lambs is stable during the spring and summer months, starts to increase in July, reaches a peak in October, and then declines to the end of the year.

ESSENTIAL ASSUMPTIONS

The projected situation is based on the following assumptions for the period concerned:

1. The population in the United States will reach levels of 174 million people in 1960 and 190 million people in 1965.

1. The population in the United States will reach levels of 174 million people in 1960 and 190 million people in 1965.
2. The present world conditions of unrest and armed peace will continue and no major war will occur.
3. Employment levels, industrial activity, and purchasing power will continue at reasonably high levels.
4. The current trend towards expansion in grassland agriculture will continue.
5. Supplies of grain, protein concentrates, roughages, and pasturage will be adequate to maintain the projected numbers of livestock.
6. Livestock producers will continue to be unhampered by quotas or regulations restricting levels of production and marketing.

PROJECTED SITUATION

Demand

Total meat consumption in the United States is dependent largely on the yearly supply. Prospective demand can be estimated, but consumption is subject to the cycles of weather, cattle, and hogs. In the past, production has tended to keep pace with demand, and it is on this basis that the calculated per capital consumption of red meats of 161 pounds in 1955 is expected to remain at about this level, with fluctuations, or 160 pounds (carcass weight) in 1965. This would require that the total meat production of 27 billion pounds in 1955 expand to around 30 billion pounds in 1965.

Meat consumption per person, United States, 1930-55

Year	Beef	Veal	Pork	Lamb and mutton	Total
	Pound	Pound	Pound	Pound	Pound
1930	48.2	6.4	66.1	6.6	127.3
1931	47.9	6.6	67.4	7.0	128.9
1932	46.0	6.5	69.7	7.0	129.2
1933	50.8	7.0	69.8	6.7	134.3
1934	63.0	9.2	63.6	6.2	142.0
1935	52.5	8.4	47.7	7.2	115.8
1936	59.7	8.3	54.4	6.5	128.9
1937	54.4	8.5	55.0	6.6	124.5
1938	53.6	7.6	57.4	6.8	125.4
1939	53.9	7.5	63.9	6.5	131.8
1940	54.2	7.3	72.4	6.5	140.4
1941	60.0	7.5	67.4	6.7	141.6
1942	60.4	8.1	62.8	7.1	138.4
1943	52.5	8.1	77.9	6.4	144.9
1944	54.9	12.2	78.5	6.6	152.2
1945	58.6	11.7	65.7	7.2	143.2
1946	60.8	9.8	74.9	6.6	152.1
1947	68.6	10.7	68.6	5.2	153.1
1948	62.3	9.4	66.8	5.0	143.5
1949	63.1	8.7	66.8	4.1	142.7
1950	62.6	7.9	68.2	3.9	142.6
1951	55.3	6.6	70.9	3.4	136.2
1952	61.5	7.1	71.6	4.1	144.3
1953	76.7	9.5	62.9	4.6	153.7
1954	79.2	9.9	59.7	4.5	153.3
1955 1/	81	9.6	66	4.5	161

1/ Partly forecast. Data published in the Livestock and Meat Situation Data published in the Livestock and Meat Situation (AMS).

Pork production and consumption have been about equal to that of beef and veal. There is a current tendency for the production and consumption of beef to increase relative to that of pork.

With expected higher real income, especially in the low and middle income brackets, the diets of the increasing population will tend to be upgraded with a higher proportion of animal protein.

The farmer's share of the consumer's food dollar spent for meat products dropped from 67 percent in 1947-49 to 56 percent in 1955.

Basic trends are reported, in part, as follows:

1. Diets.	<u>1909</u>	<u>1953</u>
Pounds food per capita	1,612 lbs.	1,533 lbs.
Flour and grain	base	-19%
Potatoes and sweetpotatoes	base	-23%
Meat, fish, poultry and dairy products	base	+8%
Calories	3,530	3,210 (-11%)
Trend toward protein foods as low income diets continue to be upgraded.		

2. Farm-dressed meat.	<u>1940</u>	<u>1954</u>
Pounds - percentage of total	10%	6.4%
Value - percentage of total	6%	4.0%
Trend downward		

3. Processed meat.

Packaged meat 1953 - 20% of total
Frozen meat - small but 300% above 1947 in 1953
Trend strongly upward

4. Retail sales.	<u>1940</u>	<u>1953</u>
Percentage of all food sold at retail	60%	70%
Trend upward		

With automatic refrigeration and the almost universal availability of electricity, the bulk processing, transportation, and storage of perishable foods became possible. These tools were used first to reduce spoilage and store peak surpluses. They were used next to broaden the outlet for perishables. They have now become the means for adding consumer convenience and satisfaction to foods. Economy may also be a byproduct.

Frozen food is sold in 74 percent of all food stores and 99 percent of the chains. Already 6 percent of supermarket sales are frozen food with the problem of transportation and adequate display cases still the limiting factors.

With the freezing facilities available, or around the corner, the citrus industry was one of the first to use this means to spread peak supplies over the whole season; to squeeze the good part of the off-colored, misshapen fruit. More intricate are the problems of meat merchandisers, but a start has been made in the same direction. About half of the cattle slaughtered for meat yield carcasses that grade commercial or lower. They are chiefly from older cattle, cows, and thin steers. The meat is nutritious and wholesome but inclined to be less tender, unattractively dark, and coarse and dry. About a third of the slaughtered cattle grade choice and prime. Their steaks and roasts move easily into the retail trade. Unhappily many of these better finished, younger cattle are too big (over 1,200 pounds, live weight), and about 45 percent of their carcasses (chuck, plate, flank, and kidney) are too wastey with fat to suit customers.

Until recently, meat retailers have presented beef to the consumer as it came from the various carcasses. The housewife could take it or leave it for the retailer to mark down or to trim and grind. Increasingly, today, retailers and wholesalers are boning, defatting, and processing the less popular cuts into small, acceptable portions. Big rounds are separated into inside, outside, and sirloin tips; big beef ribs are cut to a 7-inch length and partially boned; chucks are boned; defatted, and tied; less tender lean is frozen, sliced thin, and 5 to 10 slices are refrozen into "chip" steaks; "bacon-burger" adds variety and flavor to less palatable ground lean beef; trimmed stewing meat from plates and necks is cooked slowly, mixed with vegetables, and added to the long list of frozen prepared dishes and meals. The list is already long, but only a start has been made.

If the sheep breeder and feeder can produce a 70-pound feeder lamb and a 100-pound fat lamb about as cheaply as a 50-pound feeder and 80-pound fat lamb, the consumer should benefit even though she prefers the 6- to the 8-pound leg. Already the meat fabricator is making little ones out of big ones through boning, wrapping, and freezing.

With the technical tools available to fabricate, process and store, it only remains for the trade to develop acceptable routines; expand the transportation and retail display facilities, and educate consumers to the satisfactions and economies of unfamiliar items. Some of the smaller commercial processors of meat claim that processed meat can be moved from carcass to kitchen at a cost of 5 percent below that needed today by the supermarket prepackaged operation.

One seems justified in supposing that the demand for built-in kitchen service, coupled with the use of freezing, vacuum and CO₂ packaging, electrical sterilization and precooking, will make many of our familiar meat cuts as rare in the retail store of the future as tub butter and unroasted coffee.

The net result of these changes that are distorting the familiar pattern of meat marketing will be to broaden consumer demand for the less popular grades and cuts; to make meat buying less a matter of judgment and more the ability to read brand names, grades, and labels; to make tender, palatable

meat less dependent upon the skill of the cook. It should reduce waste and spoilage, thus reducing the supply necessary to meet the demand. It may lower the peaks and raise the valleys of livestock prices. It might even increase the per capita consumption of red meats.

The export trade removes about half a billion pounds of lard a year from the domestic market and some 1 1/3 billion pounds of inedible tallow and grease. The relatively unimportant net import of about 200 million pounds of meat consists mainly of specialty products such as canned beef and canned pork.

Production

General considerations.--The relative position of meat animal production in United States agriculture promises to become increasingly important during the years ahead. Meat animal numbers are expected to expand during the next decade, and total red meat supplies should keep pace with the rapidly increasing population. Greater competition between the beef cattle, swine, sheep, and poultry industries for a larger share of the meat trade will be increasingly apparent as organized producer groups intensify their efforts to produce and merchandise a more acceptable product. Continued expansion of grassland agriculture during the coming years is likely to encourage increased production of roughage consuming animals, especially in many areas where livestock traditionally have played a minor role.

Projection for the period 1957-62 indicates that meat animal prices, while not unusually high, will compare favorably with prices of other farm products. Capital investment required and operating costs will probably continue to increase. The struggle to realize profits will force producers to step up the efficiency of their operations, and result in an increasing receptiveness towards adoption of better breeding, feeding, and management practices. This will be accompanied by a marked increase in such practices as production testing, use of hormones and other feed additives, disease and parasite control measure, and laborsaving devices.

Technological advances in the field of animal disease and parasite control will be especially significant during the next decade. The maintenance of animal health will become a more complicated and serious problem as greater concentration of livestock numbers accompanies improved carrying capacities of the land grazed. The need for community and area-wide cooperative action in meeting this problem will become more acute.

Beef cattle.--The growing consumer preference for lean meat will place beef in an increasingly favorable position in relation to pork. If the 1955 per capita consumption of 81 pounds of beef is to be maintained in 1965, approximately 2 billion more pounds of dressed beef will be required to meet the demands of the predicted 26 million additional people. Based on present relationship of cattle numbers to beef consumed, this would indicate that a total cattle population of approximately 110 million head would be needed to produce the required number of slaughter animals. The next few years may witness a short period of decline in numbers of cattle and calves. The increased slaughter of cows and heifers during 1955 indicates that such a

decline is probable. Expected strong demand for beef and abundant feed supplies will probably prevent as much decrease as has occurred in previous cycles. If the cycle follows this pattern, cattle numbers will reach a low point within a few years and pass the present 97 million by 1960-62, and then push on to a new high of possibly 105 million or more by the middle sixties. Factors supporting this projection are the need for profitable utilization of the steadily increasing acreage being diverted to pastures and forage production; the adaptability of beef cattle to a wide range of climatic and topographical conditions; the ability of cattle to convert large quantities of roughage into a readily salable product; the relatively small labor and equipment requirements for beef cattle as compared with most other livestock enterprises; and the fact that the glamour and popular appeal generally associated with beef cattle production in the public mind will continue to attract new breeders and commercial producers. Significant developments in beef cattle production practices expected during the next decade include:

1. An increasing resistance in the trade against overfinished cattle due to a growing public discrimination against fat meat. Demand will be greatest for medium weight and moderately finished cattle.
2. A wider use of hormones and other growth stimulants accompanied by increased efficiency of feed utilization. Silage, soilage, and other roughages will be used more generally in the finishing process as more becomes known about rumen nutrition. Grain sorghums and small grains will become more prominent in the supplemental and fattening rations, especially in the Southern and Western States.
3. Greater emphasis will be placed on weight-for-age and efficiency of gains by cattlemen as a guide for herd improvement. Evaluation of purebred breeding animals will gradually break away from traditional patterns as the demand from commercial cattlemen and feeders for bulls and steers from performance-proven herds grows. Improvement in the average efficiency of the Nation's cattle population will be slow, but the trend will be upward.
4. Trends for the next few years in the different regions will include:
 - (a) A marked shift from production of slaughter calves to feeder calves in the Gulf and South Atlantic areas as the average quality of cattle improves. This will probably be accompanied by an increased number of cattle being finished for market locally. The rate of expansion in beef cattle numbers in this area is expected to slow down for the next few years as producers concentrate on improving the quality of their cattle and provide for more adequate levels of nutrition.
 - (b) Cows and calf operations in the range areas of the West should gradually become more stabilized as range improvement practices are more generally adopted. Another factor will be the realization that is now developing among cattlemen of the recurring drought regions on the insurance value

of preserving silage during years of precipitation to help tide over the drought periods.

- (c) The rapid expansion in feedlot operations on the Pacific coast during recent years is expected to ease off as the saturation point for satisfying the beef needs of the area is approached.
- (d) Further expansion in feeder calf production in the North Central States is expected to result from conversion of additional cropland to grass and the trend towards fewer and larger dairy herds.

Swine.--The future position of swine production in the United States will depend largely on the extent to which producers and processors transform pork to meet the challenge of consumer preferences for leaner meats. Maintenance of the traditionally important role of hogs in the livestock industry is at stake. Consumer discrimination against the fatter cuts of pork and the strong competition of other fats with lard are expected to increase. This will result in further weakening of the relative position of pork in the meat trade unless the proportion of hogs marketed as meat-type hogs is substantially increased. Recent aggressive moves on the part of the swine industry to take positive action towards correcting this situation indicate that considerable progress will be made in the next few years. The agricultural economy in many areas of the Nation is so dependent on hog production that the necessary readjustment will probably be accomplished. On this assumption, hog production is expected to expand gradually along with population increase. The severe slump in hog prices of late 1955 forcibly brought out the fact that profitable volume of production has definite limits. It also reemphasized the need for concerted efforts to achieve greater stability in production in order to level off the periodic supply and price variations. The interest that is beginning to develop in multiple farrowing and the increase in number of producers who are finishing hogs at an earlier age indicates that some progress toward better distribution of marketing receipts may be expected in the next few years.

Projections for 1958-62 are for an annual pig crop of around 105 to 108 million. Annual slaughter would be 90 to 93 million. These compare with the 101 million pigs saved and $80\frac{1}{2}$ million hogs slaughtered in 1955. The supply of pork for consumption per person would be approximately 68 pounds. This would be little different from the 66 pounds consumed in 1955, the 67 pounds in prospect for 1956, or the 1945-54 average of $67\frac{1}{2}$ pounds.

The prospects for technological advances in the field of swine husbandry in the future are especially bright. The impact of new developments in breeding, nutrition, management, and health may bring about radical changes in many of the old established practices. The trend towards "assembly line" production will probably be accelerated as practical applications are worked out on the many new innovations. Larger and more specialized units may be expected. Capital investment in swine equipment will continue upward but will be more than balanced by increased efficiency of operations.

Sheep.--The sheep industry is expected to stage a partial comeback during the next few years from the low levels of 1949-55. Future expansion will be moderate with a projected stock sheep and lamb population in the neighborhood of 35 million by the middle sixties as compared with the 27 million reported January 1, 1956. This indicates that the output of lamb and mutton per consumer may not exceed 5 pounds during the period. The buildup in United States sheep numbers will be the result of continued increase in farm flocks, particularly in the Pacific Northwest, Gulf, and South Atlantic States. The downtrend in range sheep numbers is expected to ease off. Indications are that the future range sheep industry will be largely confined to the eastern part of the intermountain region and the southwestern semiarid country. As the supply of suitable yearling and mature crossbred and fine-wool ewes available for purchase in the range areas declines, farm flock operators will depend more on ewe lambs as a source of replacements. It is likely that the "two-stage" movement of ewe lambs between range and farm flock areas will become more commonplace. By this is meant that operators in the winter wheat and other suitable areas will increasingly ship in ewe lambs during the fall and grow them out on available grazing and roughages for resale as farm flock replacement yearlings.

As a result of the greater emphasis on farm flocks, fed lambs will comprise a decreasing percentage of the total lamb slaughter in future years. The sharp increase in spring lambs could create a seasonal marketing problem during the late spring and early summer months.

The United States has been and will continue to be a deficit producer of wool. Domestic production for the period 1952-54 supplied only 41 percent of the Nation's needs. The trend of wool use over the postwar years has been downward, and future per capita consumption will depend largely on clothing styles and how successfully woollen fabrics can compete with synthetics. Production of domestic wool will rise as sheep numbers increase and fluctuations in consumption will be reflected in imports.

The outlook for satisfactory profits from sheep production as a supplementary enterprise appears to be good.

Marketing

Technological development in the techniques and system of marketing will continue. Progress is being made day by day that increases efficiency in the physical job of handling and moving farm production through the marketing channels.

The trend toward the centralization of marketing seems likely to continue. This apparently leads to reduced marketing costs at any given level of services as well as processing advantages. Freight rates, transportation, and producer psychology all seem to favor this development. This projection is given strength by the fact that some older packing plants have been discontinued in Chicago in favor of more local slaughter and more live shipments to consuming centers. As a part of the decentralized marketing developments, auctions have increased rapidly.

This growth in the number of livestock auctions has tended to level off since 1949 when they numbered 2,400. Although they are expected to continue as an important market, particularly for the feeder-type animals, the rate of growth is likely to be slower. Although the number is not expected to increase much during the next 5 years, it is probable that some auctions will increase in size. The number of new auctions may be pretty well offset by those discontinuing operations. As decentralization continues, trucks will probably handle an even greater percentage of livestock and livestock products.

The trend toward increased marketing of feeders and fat cattle on the west coast will level off as that area approaches saturation. There is some evidence that it is nearing that point at the present level of feeding.

Marketing facilities will continue to improve in the South as livestock numbers increase further and recognition of the South as a livestock area continues to develop. This should take the form of more organized marketing and fewer livestock being handled by traders. Apparently, production development has been ahead of market facilities development in the South. Auctions and direct buying will continue to be relatively more important as a market outlet in this area.

The trend that has been noted towards the buying of hogs on a quality as well as weight basis will probably increase. Buying by weight is not suited to decentralized markets, and it seems certain that consumers will continue to prefer high-quality pork.

The marketing industry will continue to grow during the next 5 years with livestock numbers and increased demand for services by consumers. The percentage of all food products going through marketing facilities will continue to increase as the trend toward specialization and less farmer food processing continues. Specialized production is impossible without a complicated and efficient marketing system.

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Program Projection Report No. 5b

Dairy

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Dairy

The purpose of this statement is to estimate the future demand for, and supply of milk.

GUIDEPOSTS

1. The primary demand for dairy products is for human use.

This means that our projection of demand for milk is dependent almost entirely on the number of people times their consumption. For many years 97 percent of the milk fat produced has been used for human food. In earlier years much of this milk fat was marketed as farm-separated cream and the nonfat portion kept on the farm for livestock feed, which provided a secondary use or demand for part of the nonfat solids in the milk supply. Human use of the nonfat solids has increased substantially since the beginning of World War II. At that time we used slightly over half of the total supply. By the end of the war human use had risen to two-thirds, and currently it is about three-fourths of our national production of nonfat solids.

2. Our primary supply of dairy products comes from milk cows.

Except for a negligible quantity of goat's milk and some substitute products using vegetable fat in lieu of milk fat, our main source of supply is cow's milk. Therefore, our projection of supply is dependent almost entirely on the number of milk cows in the United States times their production.

3. Our dairy industry is almost entirely domestic.

Practically all of our total supply of milk and dairy products is produced and consumed domestically. Historically, United States exports and imports of dairy products have been around 1 percent of total production except during and following World War I and World War II.

Even at the peak of World War II in 1944 exports were only 5.7 percent of the United States production. With large movement out of Commodity Credit Corporation price support holdings in 1955, the amount exported was 5.6 percent. Practically all of our imports on a milk equivalent basis have been below 1 percent of domestic production for a quarter of a century. On a value basis over 90 percent has been cheese and casein.

PAST TRENDS IN PER CAPITA CONSUMPTION

Table 1.--Per capita consumption of selected dairy products, and margarine, United States, by decades

Item	: 1925	: 1935	: 1945	: 1955
	: Pounds	: Pounds	: Pounds	: Pounds
Total milk equivalent, all products ^{1/}	: 790	: 790	: 777	: 700
Fluid milk and cream	: 337	: 326	: 399	: 353
Butter	: 17.8	: 17.3	: 10.8	: 8.9
Cheese	: 4.6	: 5.2	: 6.6	: 7.7
Evaporated whole milk	: 9.0	: 14.5	: 16.1	: 14.0
Ice cream (product weight).....	: 9.6	: 8.0	: 15.5	: 17.8
Nonfat dry milk	: 0.4	: 1.6	: 1.9	: 5.9
Margarine	: 2.0	: 2.9	: 4.0	: 8.0
	: :	: :	: :	: :

1/ Fat solids basis.

Fluid Milk and Cream

In per capita consumption two periods stand out, the low rate during the depression years and the high rate of the war years.

Butter

Consumption ranged from 16 to 18 pounds from 1920 to 1940. World War II brought rationing, decreased production, and a shift in eating habits. In the postwar period consumption declined to a new low of 8.4 pounds in 1953 but has increased by half a pound since.

Cheese

During the last quarter century there has been a steady upward trend in per capita cheese consumption. Since 1950 consumption has been fairly steady except in the low production year of 1951.

Evaporated Milk

Consumption increased steadily through 1948 except for the war years. The decline since 1948 is substantially due to competition from filled evaporated milk (which uses other than milk fat), dry milk products, and fluid milk. The general increase in consumer purchasing power has also been a factor in this decline resulting in a shift from evaporated to fluid milk.

Ice Cream

Ice cream consumption is closely related to price and consumer incomes. Therefore, consumption goes up in periods of prosperity and drops in depression years. Consumption increased from about 9 pounds in the 1920's to 23 pounds in 1946. The lowest consumption was during the depression when it dropped to 6 pounds.

Nonfat Dry Milk

There has been a steady increase in consumption of nonfat dry milk solids. Consumption per capita is low but gaining in importance as indicated by the gain from less than half a pound to about 6 pounds, most of the gain taking place in recent years.

Margarine

Consumption showed little gain until the beginning of World War II. Since that time it has increased from 3 pounds to 8 pounds. Consumption has leveled off since 1952 at slightly more than 3 times the prewar level. Yellow color, better quality, vitamin fortification, and a wider price spread as compared with butter have been important factors in this increase.

PAST TRENDS IN TOTAL UTILIZATION

Table 2 shows the relative importance of the various dairy products in the utilization of the total milk supply. Fluid milk and cream now require about 48 percent of the milk. The 18 billion pounds increase in use as fluid milk since 1925 more than offsets the 12 billion pounds decrease in milk used for butter.

Table 2.--Utilization of the United States milk supply
by major uses, by decades
(In billions of pounds, whole milk equivalent basis)

Item	:	1925	:	1935	:	1945	:	1955 ^{1/}
Total milk supply	:	98.5	:	104.0	:	120.6	:	123.5
Fluid consumption:	:		:		:		:	
Farm	:	13.9	:	12.4	:	12.6	:	10.1
Nonfarm	:	26.9	:	30.6	:	40.2	:	48.2
Total fluid	:	40.8	:	43.0	:	52.8	:	58.3
Butter:	:		:		:		:	
Creamery butter	:	30.5	:	32.7	:	28.1	:	28.4
Farm butter	:	13.2	:	10.9	:	6.7	:	3.3
Total butter	:	43.7	:	43.6	:	34.8	:	31.7
Cheese	:	5.2	:	6.2	:	11.1	:	13.4
Evaporated, condensed, and dry whole milk	:	3.5	:	4.6	:	10.6	:	7.1
Frozen dairy products (net milk used) ...	:	2.9	:	2.3	:	5.2	:	8.2

^{1/} Preliminary

PAST TRENDS IN MILK PRODUCTION

As shown in table 3, cow numbers increased from 21.5 million in 1925 to a high of 25 million in 1945 and have declined to slightly over 21 million now. Production per cow has increased substantially during this period. During the more recent period when average milk production per cow increased most rapidly the average butterfat test has declined.

Average percentage of butterfat in milk, United States

<u>1925</u>	<u>1935</u>	<u>1945</u>	<u>1955</u>
3.92	3.95	3.98	3.86

The reduction of only 0.12 percent during the last decade may seem insignificant, but when applied to the total milk production in 1955 if the butterfat test had been the same as in 1945, 148 million pounds of additional butterfat would have been produced. Assuming that all this amount had been made into butter it would have made about 185 million pounds. When it is noted that Government purchases of butter for price support during 1955 amounted to 162 million pounds, the significance of the downward trend in average butterfat test seems important.

Note in table 3 that delivery of whole milk to plants has increased threefold during the period shown, while farm-separated cream sales are only half as large.

Table 3.--Milk cows, production, and farm marketings of milk,
United States, by decades

Year	:	:	:	:	Milk delivered	
	:	:	:	:	to plants and	
	:	Milk	Milk	Total	dealers from farms	
	:	cows	production	production	As	As farm-
	:	1/ on	2/ per	of	whole	3/ skimmed
	:	farms	cow	milk	milk	cream
	:	Million	Pounds	Mil. pounds	Mil. pounds	Mil. pounds
1925	:	21.5	4,218	90.7	26.8	30.4
1935	:	24.2	4,184	101.2	35.6	32.6
1945	:	25.0	4,787	119.8	68.9	23.9
4/1955	:	21.2	5,815	123.5	90.6	15.2

1/ Average number on farms during year excluding heifers that have not freshened.

2/ Excludes milk sucked by calves and milk produced by cows not on farms.

3/ Milk equivalent.

4/ Preliminary.

PROJECTED NEED FOR MILK IN 1965

It is assumed that, historically, milk production has been guided by the demand for milk; furthermore, that the demand was reflected through price which encouraged production through price increases and discouraged production through price declines. No projection has been made for programs to support prices or for exports at prices below the domestic price level. This involves agricultural and national policy and does not lend itself to future projection.

Any projection based on past trends and interpreted in the light of present knowledge involving the responses of millions of people who are influenced by attitudes, customs, income, prices, substitutes, and other factors that enter into decision making, will at best be only an approximation. Therefore it seems that the method used, factors considered, and assumptions made are more important than the final figure. Familiarity with the procedure will enable others to adjust the projection where they disagree with the assumptions and where passage of time brings additional information that will cause a change in method, or in weighting of factors, or in changed assumptions.

In analyzing the demand for milk, we may find it a help to get a perspective of the proportion going into different uses so that we can give emphasis in the projection accordingly. For a number of years about three-fourths of the Nation's milk production has gone into two major uses, (1) fluid for bottling (about 50 percent now) and (2) butter (about 25 percent now). The remaining one-fourth has been used for cheese, evaporated, condensed, dry whole, and calves.

Fluid Milk

Per capita fluid milk consumption of 353 pounds in 1955 was 1.79 glasses per day (4 glasses per quart). Assuming an increase to 1.9 glasses daily, which was the level of consumption from 1943 to 1947, would result in an increase of 20 pounds per person. (1.9 glasses daily x 365 days x .5375 pounds (wt. per glass) = 373 pounds annually per person.)

Butter

Butter is still the second largest use of the milk supply. Between 1935 and 1945 the average per capita consumption declined 6.5 pounds, and between 1945 and 1955 the decline was 1.9 pounds. A further decline of 1 pound per capita is assumed for the next decade. Competition from margarine with a price advantage of more than 2 to 1 is being met currently by improved quality of butter, better merchandising, and increased promotion. A decline in per capita consumption of butter of 1 pound will amount to a drop of 21 pounds (whole milk equivalent) consumed per year.

Cheese

The per capita consumption of cheese has increased 1 pound each decade during the last 30 years, and consumption is well below that of some foreign countries. Considerable emphasis on improvement in merchandising and increased promotion have occurred in recent years; however, the rate of increase has slowed down. A one-half pound increase in the next decade is assumed. This would require an additional 5 pounds of milk per capita.

Ice Cream and Frozen Desserts

Consumption of ice cream and frozen desserts doubled during the last two decades. Undoubtedly, increased home freezer space, increased availability in a wide variety of flavors and packages, convenience for serving, and the widespread development of drive-in type retail establishments, especially during the summer, have contributed to the increase. The net milk used per capita for ice cream in 1955 was 48.2 pounds and in 1945 was 37 pounds, or an increase of 11.2 pounds. This is calculated on a fat solids equivalent basis. The present trend is toward lower fat content in frozen desserts. Therefore, even though we were to anticipate an increase in frozen milk uses, it is doubtful that additional milk would need to be produced. Because we are not now using all the available nonfat solids for human use, the present level of milk production should supply sufficient nonfat solids for any foreseeable increase in frozen dairy desserts in the next decade.

PROJECTED PER CAPITA CONSUMPTION IN 1965

Assuming that all other uses remain at the 1955 level we would have the following projection

Projected per capita consumption of milk and dairy products, 1965:

	Pounds
Total milk equivalent, all uses, 1955 (fat solids basis)	700
Increase in fluid milk uses	+20
Decrease in milk used for butter	-21
Increase in milk used for cheese	+ 5
Total	704

704 lbs. x 190 million (population)	= 133.8 billion lbs.
Amount needed for calves	3.0 " "
Estimate of total milk needed in 1965	136.8 " "

PROJECTED NUMBER OF MILK COWS NEEDED IN 1965

Average production of milk per cow has increased about 1,000 pounds during the last decade. The annual average production per cow of 5,815 pounds for 1955 is well below the average of 9,363 for DHIA herds which is within the realm of expectation for many dairymen. The rate might increase faster now. The increased "know-how" of dairymen brings about better breeding and management. The trend toward larger and fewer herds will result in better managed units.

Projecting the same trend in the next decade as in the last would result in an annual rate of production of 6,800 pounds per cow. It seems reasonable to expect some gain in rate; therefore, we have assumed a production of 7,000 pounds per cow. Seven States already have averages above that figure, and the average in California is 8,550 pounds per cow.

$136.8 \div 7,000 = 19.5$ the estimated number of cows, or a reduction of 1.7 million from the 1955 level.

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Program Projection Report No. 5c

Poultry

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Poultry

NATURE OF THE INDUSTRY

The production of poultry and eggs is nationwide and is becoming increasingly commercialized. The poultry industry is domestic in nature. It has never had to depend on an export market. In 1955 United States exports of poultry products amounted to about 33 million dollars. This represented less than 1 percent of the cash income to farmers from poultry products. Exports of poultry products are likely to continue to rise slightly during the next 5 years, but a large and rapid expansion is not expected. Imports of poultry products amounted to less than 3 million dollars in 1955.

EFFICIENCY

In recent years much progress has been made in increasing the efficiency in the production and marketing of eggs, chickens, and turkeys. Continued progress is expected during the next 5 years. For example, it is anticipated that the number of pounds of feed required to produce a dozen eggs and a pound of chicken or turkey meat will continue to be reduced.

The commercial broiler and turkey industries have been expanding, and a projection of trends indicates that they will continue to expand during the next 5 years. Two factors have contributed to this expansion: (1) improved technology and (2) larger supplies of feed and other resources. The cost per unit of output, in terms of feed, labor, and other items used in production, has been reduced sharply in recent years. For example, during the past 20 years the innovations in broiler production have made possible an increase of 162 percent in output per man-hour of labor. Innovations in nutrition, breeding, and sanitation have made possible economical year-round production. This has permitted greater efficiency in use of the factors of production, such as labor and equipment. It has also made possible greater efficiency in processing and distribution.

Despite the great advances over the past few years, researchers predict that new developments, such as improved rations, will make possible even greater efficiency. In broiler production we can anticipate the adding of larger amounts of energy-supplying fats to feeds, supplementing natural proteins with synthetic amino acids and greater utilization of hormones. These discoveries, combined with improved strains and continued improvements in disease control, should make possible the commercial growing of 3-pound broilers in less than 8 weeks, and on less than 6 pounds of feed. Three-pound broilers have already been produced at the Maryland Agricultural Experiment Station in less than 8 weeks and on less than 5 pounds of feed. Although the ration used is not now commercially practical, it gives a clear indication of things to come. Similarly, new developments in nutrition, breeding, and sanitation will make possible greater efficiency in the production of eggs and turkeys.

PROJECTION, 1955 to 1960

The projected increase in consumption of eggs, chicken, and turkey for 1955 to 1960 is based on an expected 8-percent increase in population and a 3.3 percent increase in the per capita consumption for eggs, 14.6 for chicken, and 10 percent for turkey. These increases are expected as a result of the more rapid application of new technology by the poultry industry, which, as a result of reduced costs, places poultry products in a stronger competitive position with competing foods. Also, food habits are changing, people are eating more meats, dairy products, poultry products, and fruits and vegetables, and less cereals and potatoes.

The data referred to in this statement and in the tables for the years 1950 through 1955 are tentative and subject to revision. Revisions in the data will necessitate a corresponding revision in the projection for 1960. Table 1 gives a projection of trends for eggs, chickens, and turkeys for 1955 to 1960. Tables 2 and 3 give supporting information relating to egg supply and distribution for the years 1947 to 1955, tables 4 and 5 give similar supporting information for chickens, and tables 6 and 7 for turkeys. Most of the items given in the distribution tables under Department of Agriculture are balancing items and are included for that purpose.

Eggs

For several years prior to 1942 the consumption of eggs had not exceeded 335 per capita. During the 4-year period beginning in 1942 the per capita consumption increased to a high of 397 in 1945 and since then has ranged between 366 and 387. Although the per capita consumption has been decreasing during the past 4 years the projected consumption based on the past 10-year period would indicate that 378 eggs would be consumed per capita by 1960. Annual egg consumption is projected to increase by 3.3 percent per person and total consumption by 11.3 percent.

Although commercial exports and shipments of eggs have been increasing in recent years, the export market provides an outlet for a relatively small proportion of the eggs produced. In 1955 exports of eggs amounted to 65 million dozen or 1.2 percent of production. A projection of past trends indicates that exports will continue to increase but are not likely to exceed 1.5 percent of projected production for 1960.

During the past 10 years the rate of lay, ^{1/} has increased at an average annual rate of 3.6 eggs per bird. The projected trends indicate an average annual increase in rate of lay of 3 eggs per bird, or 7.8 percent, from 1955 to 1960. This is a lower rate of increase than shown in recent years. It is expected that there will be an increase of 7.4 percent in the number of layers from 1955 to 1960. This is in reverse of the longtime trend in the reduction of the number of layers that has been taking place.

^{1/} Rate of lay is based on the average number of layers on hand during the year.

Chickens

The projection of trends indicates that the total consumption of chicken meat will increase by 22.6 percent from 1955 to 1960. The per capita consumption of chicken meat is expected to increase from 20.9 pounds in 1955 to 24 pounds by 1960—an increase of 14.6 percent. In 1955 commercial exports of chicken reached 46 million pounds. This amounted to only slightly over 0.1 percent of total production.

The number of farm chickens has declined rapidly since World War II. It is therefore anticipated that there will be a further decline in the number of farm chickens slaughtered. A 40-percent increase is expected in the number of commercial broilers produced from 1955 to 1960. 2/

Turkeys

The projection of trends indicates that the total consumption of turkey will increase by 18 percent from 1955 to 1960. The per capita consumption of turkey is expected to increase from 5 pounds in 1955 to 5.5 pounds in 1960—an increase of 10 percent.

A projection of trends indicates that the total number of turkeys raised will increase from 65.6 million in 1955 to 73 million by 1960. Of the 73 million, it is expected that 61 million will be of the large-breed type and 12 million of the small-breed type. Trends indicate the number of small-breed type turkeys is expected to continue to decline from 1955 to 1960. 3/

COMPETITION BETWEEN PRODUCTION AREAS

The poultry industry has become increasingly specialized. It is less firmly tied to fixed physical resources than other kinds of farm output. The necessary resources are flexible. They can be brought together almost anywhere. Even climate and weather have relatively small influence. The revolution in farm production technology in the past quarter century has affected production of poultry more than other kinds of livestock. This revolution has resulted in poultry production becoming a sort of manufacturing process, both in its sideline phases as a supplement to other farm enterprises, and as a specialized type of production. Growers in all regions have had access to the advances in technology, but some regional differences have resulted. These differences are not so much related to natural circumstances as to manmade factors, and they are subject to change, as history shows.

2/ In projecting this trend consideration was given to the prospective increase of at least 20 percent in the production of commercial broilers from January through August 1956 over 1955.

3/ In projecting these trends consideration was given to the estimated 20-percent reduction in the number of small-breed type turkeys in 1956 from 1955. It is estimated that 13.5 million small-breed type turkeys will be raised in 1956.

No one area or region is likely to find a natural protective barrier in any location advantage that will shelter its poultry industry. Each area must strive to maintain its efficiency in production and marketing in order to keep up with the procession. Those engaged in the production and marketing of eggs, chickens, and turkeys need to keep informed about trends in the industry, especially when contemplating long-term capital investments.

TABLES

Table 1.— Eggs, chickens, and turkeys: Projection of trends, 1955 to 1960 ^{1/}

Item	1940	1945	1950	1955	1960
Population, United States (mil.)...	134	141.8	153.8	165.2	178
<u>EGGS</u>					
Per capita consumption (civilian)...	314	397	384	366	378
Rate of lay (per layer on hand during year).....	134	152	.....	192	207
Production (mil.dozen) ^{2/}	3,604	5,154	5,404	5,403	6,012
Number layers (monthly average on hand during year) (mil.).....	297	369	340	309	332
<u>CHICKENS</u>					
Per capita consumption (civilian) (lbs.).....	13.9	21.3	20.3	20.9	24
Production (ready-to-cook weight) (mil. lbs.).....	.....	.....	3,176	3,555	4,402
Farm chickens:					
Number raised (mil.) ^{3/}	634	890	635	462	433
Number slaughtered (mil.).....	571	792	564	386	363
Slaughter live weight (mil.lbs.)...	2,220	3,285	2,433	1,672	1,597
Commercial broilers:					
Number (mil.).....	143	366	631	1,078	1,507
Pounds, live weight (mil.).....	413	1,107	1,938	3,309	4,672
<u>TURKEYS</u>					
Per capita consumption (civilian) (lbs.).....	2.9	3.4	4	5	5.5
Production (ready-to-cook weight) (mil. lbs.).....	.....	.....	606	818	970
Total number turkeys raised (mil.)...	33.8	42.9	43.8	65.6	73
Large-breed type (mil.).....	.....	.....	38.7	48.8	61
Small-breed type (mil.).....	.....	.....	5.1	16.8	12

- ^{1/} Data given for 1950 and 1955 are tentative and subject to revision. Revisions in these data will necessitate a corresponding revision in the projection for 1960.
- ^{2/} Nonfarm production of eggs for 1954 and preceding years is assumed to be 10 percent of farm production; for 1955, 9 percent; 1956, 8 percent; 1957, 7 percent; 1958, 6 percent; 1959, 5 percent; and 1960, 5 percent.
- ^{3/} Nonfarm production of chickens for 1954 and preceding years is assumed to be 10 percent of farm production; for 1955, 9 percent; 1956, 8 percent; 1957, 7 percent; 1958, 6 percent; 1959, 5 percent; and 1960, 5 percent.

Table 2.--Number of layers, rate of lay, and egg supply, 1947-55 1/

Year	Hens and pullets on farms January 1	Average monthly number of layers on hand during year	Egg production per layer on hand during year 2/	Total eggs produced	Beginning commercial stocks	Imports	Total supply
	Millions	Millions	Eggs	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.
1947.....	431	345	160	5,077	109	1	5,187
1948.....	418	332	166	5,032	73	2	5,107
1949.....	399	331	170	5,148	72	8	5,228
1950.....	424	340	.....	5,404	53	20	5,477
1951.....	399	328	.....	5,322	52	8	5,382
1952.....	397	320	.....	5,323	63	8	5,394
1953.....	373	312	.....	5,307	54	7	5,368
1954.....	371	314	188	5,402	38	4	5,444
1955.....	369	309	192	5,403	69	2	5,474

Table 3.--Eggs: Distribution, 1947-55 1/

Year	Total supply	Department of Agriculture				Domestic disappearance			
		Ending commercial stocks	Beginning stocks	Ending stocks	Deliveries	Net purchases for export	Eggs used for hatching	Military	Civilian per capita
	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	No. : Lb.
1947.....	5,187	73	61	144	176	259	176	77	4,554 : 378 : 47.6
1948.....	5,107	72	144	96	33	-15	178	127	4,705 : 384 : 48.6
1949.....	5,228	53	96	206	56	166	202	62	4,717 : 378 : 48.2
1950.....	5,477	52	206	304	150	248	201	71	4,875 : 384 : 49.3
1951.....	5,382	63	304	45	215	-44	226	155	4,943 : 387 : 50.0
1952.....	5,394	54	45	.....	11	-34	219	118	4,983 : 385 : 50.0
1953.....	5,368	38	.....	.....	.....	.....	226	117	4,929 : 374 : 48.6
1954.....	5,444	69	.....	.....	.....	.....	225	101	4,985 : 371 : 48.2
1955.....	5,474	73	.....	.....	.....	.....	226	91	5,019 : 366 : 47.6

1/ Data given for years 1950 through 1955 are tentative and subject to revision.

2/ Includes nonfarm production of eggs, which through 1954 is assumed to be 10 percent of farm production; for 1955 it is assumed to be 9 percent.

Table 4.--Chickens: Supply, 1947-55 1/

Year	Farm chickens raised	Farm chickens slaughtered		Commercial broilers produced		Total production, ready-to-cook 2/		Beginning commercial stock	Imports	Total supply
		Number	Live weight	Number	Live weight	Number	Weight			
	Million	Million	Mil. lbs.	Million	Mil. lbs.	Million	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.
1947.....	719	653	2,742	310	936	2,706	166	12		2,884
1948.....	615	555	2,372	371	1,127	2,563	220	36		2,819
1949.....	705	597	2,529	513	1,570	2,991	107	15		3,113
1950.....	635	.....	.....	631	1,938	3,176	161	5		3,342
1951.....	663	.....	.....	806	2,463	3,563	163	1		3,727
1952.....	617	.....	.....	887	2,699	3,648	187	3		3,838
1953.....	609	.....	.....	957	2,933	3,715	123	.....		3,838
1954.....	540	461	1,975	1,048	3,236	3,743	145	.....		3,888
1955.....	462	386	1,672	1,078	3,309	3,555	139	1		3,695

Table 5.--Chickens: Distribution, 1947-55 1/

Year	Total supply	Department of Agriculture				Domestic disappearance			
		Ending commercial stocks	Commercial exports and shipments	Beginning stocks	Ending stocks	Net purchases for export	Military	Civilian	per capita
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Pounds
1947.....	2,884	220	23	.....	.....	.....	54	2,587	17.9
1948.....	2,819	107	12	.....	.....	.....	40	2,660	18.1
1949.....	3,113	161	13	.....	.....	.....	43	2,896	19.4
1950.....	3,342	163	15	.....	.....	.....	65	3,099	20.3
1951.....	3,727	187	29	.....	.....	.....	106	3,405	22.2
1952.....	3,838	123	21	.....	.....	.....	105	3,589	23.1
1953.....	3,838	145	32	.....	.....	.....	89	3,572	22.6
1954.....	3,888	139	34	.....	.....	.....	86	3,629	22.5
1955.....	3,695	125	46	.....	.....	.....	85	3,439	20.9

1/ Data given for years 1950 through 1955 are tentative and subject to revision.

2/ Includes nonfarm production of chickens, which through 1954 is assumed to be 10 percent of farm production; for 1955 it is assumed to be 9 percent.

Table 6.--Turkeys: Supply, 1947-55 1/

Year	Number turkeys raised			Total slaughter live weight	Production ready-to- cook weight		Beginning commercial stock	Imports	Total supply
	Thousands	Small- breed type	Large- breed type	Thousands	Thousands	Mil. pounds	Mil. pounds	Mil. pounds	Mil. pounds
1947.....	.....	.....	.....	33,975	.....	485	128	2	615
1948.....	.....	.....	.....	31,541	.....	420	83	7	510
1949.....	.....	.....	.....	41,266	.....	569	51	3	623
1950.....	.....	.....	.....	43,792	.....	606	118	.....	724
1951.....	38,668	5,124	.....	52,476	.....	691	110	.....	801
1952.....	41,456	11,020	.....	60,868	.....	773	107	.....	880
1953.....	43,115	17,753	.....	57,141	.....	725	147	.....	872
1954.....	40,898	15,623	.....	67,693	.....	870	122	.....	992
1955.....	48,539	19,154	.....	65,570	.....	818	.....	.....	939
1955.....	48,786	16,784	.....	.....	.....	.....	.....	.....	.....

Table 7.--Turkeys: Distribution, 1947-55 1/

Year	Commer-			Department of Agriculture			Domestic disappearance		
	Total supply	Ending commer- cial stocks	Ending commer- cial stocks	Beginning stocks	Exports and ship- ments	Net purchases for export	Military	Civilian	per capita
	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	Pounds
1947.....	615	83	.....	.....	.....	.....	25	507	3.5
1948.....	510	51	.....	.....	.....	.....	13	446	3.0
1949.....	623	118	.....	9	.....	9	13	483	3.2
1950.....	724	110	.....	9	.....	-9	20	603	4.0
1951.....	801	107	.....	.....	.....	.....	35	659	4.3
1952.....	880	147	.....	.....	.....	.....	41	692	4.5
1953.....	872	122	.....	.....	.....	.....	42	708	4.5
1954.....	992	121	.....	.....	.....	.....	30	841	5.2
1955.....	939	96	.....	.....	.....	.....	26	817	5.0

1/ Data given for years 1950 through 1955 are tentative and subject to revision.

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Program Projection Report No. 5d

Cotton

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Cotton

PRESENT SITUATION

Production

In 1951 farmers were urged to grow more cotton for Korean war needs, and to meet short supplies in foreign markets.

Despite a 39 percent cut in United States acreage since 1951, total production has remained substantially unchanged due to increased yields.

This rapid increase in yields is an acceleration of a 30-year trend. Since 1925 the lowest annual yields have exceeded the highest yields of earlier years. In most of the belt, cotton has no close competitor as an income-producing enterprise, and farmers consider it their most dependable crop. Moreover, cotton is very responsive to improved cultural practices. In recent years there have been a number of technological improvements bearing on yields, such as fertilization, disease-resistant varieties, and insect and disease control.

Because cotton is their most dependable crop, farmers have continued to increase their acreage yields, since 1951, regardless of the reduction in domestic consumption and foreign exports. Farmers have produced 15 million bales per year, while annual domestic consumption (9 million bales) and exports (3.4 million bales) have totaled only 12.4 million bales per year.

Upward trends in yield per acre can be expected to continue. Farmers are finding it profitable to apply new technology more widely and intensively. They will continue to make more use of new technologies because they have not yet neared the break-even points in most of them. For example, cotton growers applied fertilizers containing an average of about 80 pounds of plant nutrients for each acre of cotton in 1954. At that rate of fertilization, an additional dollar spent for fertilizer produces additional cotton worth \$5, after deducting harvesting and ginning costs. If three times as much fertilizer were applied on the cotton crop, return on an additional dollar spent for fertilizer would still be nearly \$3 (8). Under these price and technological conditions, farmers will continue to fertilize more heavily.

Production Area Shift

Marked changes have taken place in areas where cotton is grown during the past 25 years. In 1928-32 the irrigated Far West grew only 3.2 percent of all United States cotton; for 1950-54, it grew 20.7 percent. The Delta, High Plains, and Lower Rio Grande Valley also have increased their share of total production. In general these areas have yields considerably above the United States average. The irrigated Far West averages around 700 pounds per acre, nearly double the United States average. For State production since 1945, see table 3.

Utilization

General breakdown of utilization of cotton in 1954:

Clothing	3,294,800 bales
Household	2,727,970 do
Industrial	1,823,210 do
Other uses	764,710 do
Total	8,610,690

Cotton has not shared in the increased fiber consumption per capita that has come with rising standards of living in recent years. (Table 63, Agricultural Outlook Charts.) Since 1951 total domestic consumption of cotton has declined slightly, and exports have fallen off sharply. (Table 2.)

Table 1.-- United States per capital consumption of cotton, wool, flax, silk, and manmade fibers

<u>Year</u>	<u>Total 1/ pounds</u>	<u>Cotton pounds</u>	<u>Synthetic pounds</u>	<u>Other 2/ pounds</u>
1920	30.0	26.5	0.1	3.5
1925	30.8	26.6	0.5	3.8
1930	25.1	21.3	1.0	2.9
1935	27.6	21.7	2.0	4.0
1940	37.2	30.0	3.7	3.6
1942	51.2	41.8	4.8	4.7
1945	42.8	32.3	5.9	4.7
1950	45.0	30.9	9.8	4.4
1954	37.0	25.4	9.1	2.4

1/ Total consumption divided by population on July 1 and not a summation of details.

2/ Wool, flax, and silk.

In general cotton has lost about 400 million pounds of fiber in industrial uses during 1950-54 and has increased only about 100 million pounds in apparel and another 100 million pounds in household uses. At the same time manmade fibers have gained 60 million pounds in household uses and 250 million pounds in industrial uses, while holding the same on apparel. (See table 14.)

Clearly, cotton faces a crisis in its research program to meet its competition.

Supply

Since 1951 farmers have produced 15 million bales annually. Domestic consumption has amounted to 9 million bales annually and $3\frac{1}{2}$ million bales have been exported. The remaining $2\frac{1}{2}$ million bales per year have been added to the supply, which stood (as of July 31, 1955) at 11 million bales. (Table 2.)

Ginning

The number of active cotton gins has decreased from almost 12,000 in 1940 to about 7,000 in 1954. The gins of today are being modernized and expanded to handle the cotton harvested in their areas and to render better service to the cotton producers. (See table 8.) A modern gin can handle twice as much cotton during a day as a 1910 gin could.

Two opposite trends are slowly taking place on quality of crop. Average staple length for the United States has increased from 30/32 inch during the early 1930's to a strong 32/32 inch (1 inch) now. (See table 9.) At the same time grade index has dropped slightly since 1928. Before 1940 it consistently rated 96 or higher. Up to about 1935 scores often ranged from 98 to 100.5. Since 1940 it has rated above 96 only twice and has fallen as low as 91.8. Scores of 94 and 95 are common. (See table 10.) Middling White equals 100 and Strict Low Middling White equals 94.

Labor

We need far less labor now to grow cotton than in 1910. Forty percent less per acre are required and 60 percent less per bale. (See table 11.) Improved mechanization has been a big factor in this reduction. It, together with the reduction in acreage of cotton, has resulted in fewer tenants and croppers in the South. (Table 12.)

Research

Research is opening up possibilities for expanded uses of cotton by concentrating on the development of treatment and finishes that resist soiling and that are fire resistant, and on breeding cottons with greater fiber strength. High-density water resistant cotton fabrics are also being developed. All of these should result in reduced "upkeep" of cotton products, and greater consumer demand. (6)

ASSUMPTIONS

Legislation -- will be such as to -

- a. Hold the United States domestic price above the world price.
- b. Limit acreage or production quite severely in areas where cotton production is increasing, particularly in the western irrigated production area, the Lower Rio Grande Valley, the High Plains, and the Mississippi River Delta, and the brown loam area.

Production Technology

More and more of the production technology that is known but not yet generally applied (e. g., chemical weed control, heavy fertilization, irrigation, more effective insect control equipment, defoliation, and mechanical harvesting) will be applied each year.

Research

- a. Research in the technologies of production, harvesting, and ginning will continue, and will open up new possibilities for improved efficiency in cotton production.
- b. Research on improved processes for manufacturing cotton goods will continue or be accelerated.
- c. Competition from manmade fibers will continue to be keen.

PROJECTED SITUATION

Domestic Demand

Total domestic demand for cotton is expected to increase gradually. Both the growing population and the rising standard of living are expected to contribute to an increase in the consumption of cotton from the present approximately 9 million bales to 10.0 million in 1960. New findings from research programs such as new finishes for cotton fabrics give promise for expanding market outlets.

Foreign Demand

If the revision in United States cotton trade policy stays in effect, exports are expected to equal or go above the average of the past 4 years, which was approximately 4 million bales.

Production

Production will continue to increase as a result of the more widespread and more intensive application of modern technology. The incentives and opportunities to apply technology, that confront farmers today, are so great that production is expected to continue to outrun demand, as it has since 1951.

But how long production can continue to outrun demand, and what will occur to stop the increase in carryover, are problematical. It seems highly likely that the price-production-consumption problem will become so acute before 1960, that cotton growers and others most concerned will reexamine it seriously. The demand for educational help on the policy problems of cotton is likely to grow much stronger.

Table 2.-- Cotton production, consumption, exports, stocks and prices, United States, by years, 1937-55

Year : begin- ning Aug.1	Acreage : Plant- : ed		Yield : : Harvest- : ed	Produc- : : tion : : (running : : bales)	Con- : : sump- : : tion :	Ex- : : ports : : 1/	Carry- : : over : : end of : : season:	Prices : : Farm : : all : : kinds:	Loan : : rates 2/ : Mid. : 15/16"
	: 1,000 : acres	1,000 acres	Pounds	1,000 bales	1,000 bales	1,000 bales	1,000 bales	Cents	Cents
1937	: 34,090	33,623	270	18,252	5,748	5,595	11,533	8.41	9.00
1938	: 25,018	24,248	236	11,623	6,858	3,325	13,033	8.60	8.60
1939	: 24,683	23,805	238	11,481	7,784	6,191	10,564	9.09	8.95
1940	: 24,871	23,861	253	12,298	9,722	1,112	12,116	9.89	9.15
1941	: 23,130	22,236	232	10,495	11,170	1,125	10,640	17.03	14.22
1942	: 23,302	22,602	272	12,438	11,100	1,480	10,657	19.05	17.22
1943	: 21,900	21,610	254	11,129	9,943	1,138	10,744	19.90	19.26
1944	: 19,956	19,617	299	11,839	9,568	2,007	11,164	20.73	21.08
1945	: 17,533	17,029	254	8,813	9,163	3,613	7,326	22.52	21.09
1946	: 18,157	17,584	236	8,517	10,025	3,544	2,530	32.64	24.38
1947	: 21,560	21,330	267	11,557	9,354	1,963	3,080	31.93	27.94
1948	: 23,253	22,911	311	14,580	7,795	4,746	5,287	30.38	30.74
1949	: 27,914	27,439	282	15,909	8,851	5,771	6,846	28.58	29.43
1950	: 18,629	17,843	269	9,910	10,509	4,108	2,278	40.07	29.45
1951	: 28,195	26,949	269	15,076	9,196	5,515	2,789	37.88	31.71
1952	: 27,185	25,921	280	14,955	9,461	3,048	5,605	34.59	31.96
1953	: 25,244	24,341	324	16,317	8,576	3,760	9,728	32.25	32.70
1954	: 19,791	19,251	341	13,601	8,835	3,446	11,120	33.61	33.23
1955 3/	: 17,489	16,882	416	14,536	**	**	**	**	33.50

1/ Adjusted for reimports.

2/ Equivalent loan rates on a gross weight basis for Middling 15/16".

3/ Preliminary.

** Not available.

United States Department of Agriculture, Agricultural Marketing Service,
Cotton Division.

Table 3.-- Cotton: Production in 500-pound gross weight bales, by States, 1945-55

State	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955 1/
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	bales	bales	bales	bales	bales	bales	bales	bales	bales	bales	bales
Missouri	180	307	311	506	462	254	309	394	449	450	405
Virginia	16	17	18	24	20	4	14	23	18	10	10
North Carolina	428	440	452	678	466	181	542	569	449	364	355
South Carolina	664	697	651	871	554	405	871	657	690	501	570
Georgia	669	557	653	751	604	490	935	731	752	612	700
Florida	8	6	11	15	17	14	33	31	27	25	15
Tennessee	466	519	519	669	633	409	534	638	702	548	620
Alabama	931	822	931	1,197	851	575	909	890	963	728	1,059
Mississippi	1,560	1,047	1,569	2,353	1,487	1,332	1,608	1,906	2,129	1,571	2,020
Arkansas	1,042	1,281	1,276	1,982	1,632	1,090	1,249	1,366	1,548	1,351	1,668
Louisiana	387	247	505	756	650	426	760	756	806	572	584
Oklahoma	285	262	330	374	610	242	462	264	437	293	457
Texas	1,794	1,669	3,437	3,153	6,040	2,946	4,074	3,808	4,317	3,940	4,058
New Mexico	106	142	179	236	276	187	273	330	327	316	250
Arizona	117	158	234	328	543	474	803	948	1,070	911	725
California	353	458	772	968	1,268	978	1,765	1,818	1,768	1,487	1,206
All other	9	11	12	16	15	7	8	10	13	17	11
United States	9,015	8,640	11,860	14,877	16,128	10,014	15,149	15,139	16,465	13,696	14,713

American-Egyptian 2/

United States	4.1	2.5	1.2	3.6	4.0	64.2	47.2	95.0	65.5	42.1	41.5
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1/ Preliminary ginnings.

2/ Included in United States total. Grown principally in Arizona, New Mexico, and Texas.

United States Department of Agriculture, Agricultural Marketing Service, Cotton Division.

Table 4.-- Farm tractors in major cotton producing States

State	: Jan. 1 <u>1</u> / : 1945	: Jan. 1 <u>1</u> / : 1950	: Jan. 1 <u>1</u> / : 1952	: July 1 <u>1</u> / : 1954	: July 1 <u>2</u> / : 1955
North Carolina	: 31,189	56,300	93,200	119,000	121,000
South Carolina	: 12,447	28,850	40,900	55,564	56,000
Georgia	: 24,648	46,000	77,500	90,454	91,250
Alabama	: 17,060	37,350	59,800	76,361	77,000
Mississippi	: 21,077	38,000	68,600	95,260	96,000
Tennessee <u>3</u> /	: 24,052	38,000	75,900	88,726	90,500
Louisiana	: 17,630	32,000	47,000	55,467	56,000
Arkansas	: 26,537	50,000	77,600	86,155	88,750
Missouri <u>3</u> /	: 76,110	110,000	148,400	172,201	177,250
Texas	: 162,381	245,000	265,800	283,728	292,000
Oklahoma <u>3</u> /	: 70,395	102,000	102,800	110,405	110,500
New Mexico <u>3</u> /	: 10,735	18,000	18,400	18,348	18,750
Arizona <u>3</u> /	: 6,372	10,000	11,200	12,129	12,250
California <u>3</u> /	: 79,839	70,000	144,100	146,365	150,500
Total	: 580,472	881,500	1,231,200	1,410,143	1,437,750

1/ Data from U. S. Census of Agriculture.

2/ Estimated by Implement and Tractor Magazine (recognized by tractor industry as most reliable).

3/ Although a major cotton producing State, there are large areas within the State where no cotton is produced.

Table 5.-- Cotton irrigation, acres, by States, since 1945 ^{1/}

State	1945	1950	1951	1952	1953	1954	1955
Ala.	0	0	10	10	10	400	700
Ariz.	145,000	273,000	557,000	664,000	682,000	420,000	353,000
Ark.	600	10,000	12,000	43,000	67,003	116,105	143,024
Calif.	317,000	581,000	1,305,000	1,386,000	1,340,000	883,000	745,000
Ga.	25	50	100	150	200	276	976
La.	0	0	0	^{2/}	4,946	10,586	19,310
Miss.	0	0	0	^{2/}	^{2/}	43,730	83,138
Mo.	0	0	0	^{2/}	400	4,800	4,800
N. Mex.	114,000	167,000	310,000	295,000	300,000	225,000	185,000
N. C.	0	0	0	0	30	80	0
S. C.	0	0	0	0	^{2/}	^{2/}	1,042
Tenn.	0	0	50	100	1,000	2,000	2,500
Va.	0	0	0	0	0	0	0
Okla.	1,200	16,000	33,000	31,600	38,000	60,000	60,100
Tex. (esti.)	^{2/}	^{2/}	^{2/}	^{2/}	2,500,000	2,100,000	1,850,000
Total	577,825	1,047,050	2,217,160	2,419,860	4,933,589	3,865,977	3,448,590

^{1/} Based on reports from State extension irrigation specialists.

^{2/} Information not available.

Table 6.— Percent of United States cotton crop harvested mechanically

Year	:	Percent
1949	:	6
1950	:	8
1951	:	15
1952	:	18
1953	:	22
1954 <u>1/</u>	:	22
1955	:	25 <u>2/</u>

1/ 16 percent of crop machine picked; 6 percent of crop machine stripped.

2/ Estimated by Federal Extension Service Cotton Subcommittee.

Source: Agricultural Marketing Service, USDA.

Table 7.— Mechanical cotton harvesting machines on United States farms

Year	:	Mechanical pickers	:	Mechanical strippers	:	Total
1949	:	2,960	:	6,500	:	9,460
1950	:	3,900	:	7,980	:	11,880
1951	:	7,325	:	13,735	:	21,060
1952	:	11,910	:	17,060	:	28,970
1953	:	15,600	:	19,250	:	34,850
1954	:	17,000	:	22,000	:	39,000
1955	:	20,000 <u>1/</u>	:	24,000 <u>1/</u>	:	44,000 <u>1/</u>

1/ 1955 figures are tentative.

Source: National Cotton Council of America.

Table 8.— Active and idle cotton gins in the United States

Year	:	Total gins	:	Active gins	:	Idle gins
1910	:	29,380	:	26,234	:	3,146
1920	:	21,876	:	18,440	:	3,436
1930	:	16,649	:	14,508	:	2,141
1940	:	13,119	:	11,650	:	1,469
1945	:	11,048	:	8,632	:	2,416
1950	:	8,862	:	7,570	:	1,292
1954	:	7,800	:	7,069	:	731

Source: United States Department of Commerce, Bureau of Census.

Table 9.-- Cotton: Average staple of ginnings by States and United States, 1928-1955

Season:	State																	
	Ala.	Ariz.	Ark.	Calif.	Fla.	Ga.	La.	Miss.	Mo.	N.M.	N.C.	Okla.	S.C.	Tenn.	Tex.	Va.	Other.	US
	(32nd inches)																	
1928	: 28.2	: 32.5	: 30.7	: 32.5	: 28.7	: 28.7	: 30.4	: 32.4	: 30.9	: 32.8	: 28.9	: 29.7	: 29.8	: 29.2	: 29.5	: 28.6	: 33.7	: 29.9
1929	: 27.7	: 32.2	: 30.4	: 33.2	: 27.9	: 28.3	: 30.5	: 32.5	: 30.7	: 32.8	: 29.0	: 28.7	: 29.5	: 29.6	: 29.2	: 28.8	: 34.2	: 29.7
1930	: 27.9	: 32.2	: 30.8	: 34.2	: 28.4	: 28.6	: 30.7	: 32.0	: 30.0	: 33.5	: 29.7	: 29.3	: 30.5	: 29.6	: 29.8	: 28.8	: 31.6	: 29.9
1931	: 28.7	: 32.8	: 31.7	: 34.2	: 28.7	: 29.0	: 31.4	: 33.3	: 30.4	: 32.7	: 30.1	: 29.4	: 30.6	: 29.9	: 29.7	: 29.3	: 31.4	: 30.4
1932	: 28.6	: 33.3	: 32.0	: 34.8	: 28.3	: 29.1	: 30.9	: 33.4	: 31.2	: 33.4	: 30.7	: 29.3	: 31.5	: 30.7	: 29.5	: 29.2	: 31.9	: 30.4
1933	: 28.2	: 33.3	: 32.4	: 34.3	: 28.7	: 29.1	: 31.7	: 34.1	: 31.1	: 33.3	: 30.1	: 30.0	: 30.9	: 30.4	: 29.8	: 28.9	: 31.5	: 30.6
1934	: 28.6	: 33.6	: 31.8	: 35.1	: 28.2	: 29.8	: 31.0	: 34.1	: 30.9	: 34.5	: 31.0	: 28.5	: 31.7	: 29.9	: 29.0	: 29.2	: 31.8	: 30.7
1935	: 28.2	: 33.3	: 31.5	: 34.6	: 28.2	: 29.9	: 31.9	: 33.1	: 30.6	: 34.1	: 30.8	: 28.9	: 31.6	: 29.5	: 29.2	: 30.1	: 30.9	: 30.4
1936	: 29.4	: 33.7	: 31.4	: 34.7	: 29.0	: 30.3	: 32.4	: 33.6	: 30.2	: 33.6	: 31.6	: 28.4	: 32.2	: 30.2	: 29.1	: 30.3	: 31.7	: 31.0
1937	: 29.1	: 34.0	: 31.0	: 35.5	: 28.8	: 30.1	: 31.3	: 32.8	: 30.3	: 34.1	: 31.1	: 28.8	: 31.2	: 30.1	: 28.9	: 29.8	: 31.5	: 30.6
1938	: 30.1	: 33.3	: 32.3	: 35.3	: 28.8	: 30.6	: 33.2	: 34.3	: 32.6	: 34.1	: 32.2	: 29.2	: 32.3	: 31.8	: 29.9	: 31.2	: 32.9	: 31.7
1939	: 30.4	: 33.1	: 31.9	: 34.5	: 29.5	: 30.7	: 32.5	: 33.9	: 32.0	: 33.5	: 32.0	: 28.7	: 31.9	: 31.3	: 29.1	: 30.5	: 32.2	: 31.3
1940	: 30.6	: 33.0	: 33.1	: 34.4	: 31.3	: 31.2	: 32.7	: 34.2	: 32.6	: 34.3	: 33.2	: 30.9	: 32.2	: 32.1	: 30.1	: 33.8	: 32.7	: 31.9
1941	: 31.4	: 32.3	: 33.1	: 33.4	: 33.0	: 31.5	: 33.0	: 34.6	: 33.0	: 34.5	: 33.1	: 30.2	: 33.1	: 31.8	: 29.7	: 33.4	: 32.4	: 32.0
1942	: 30.9	: 32.9	: 33.3	: 34.4	: 32.7	: 31.3	: 32.4	: 34.0	: 33.3	: 34.6	: 32.3	: 30.2	: 32.9	: 32.6	: 29.5	: 32.4	: 32.9	: 31.9
1943	: 30.8	: 33.5	: 32.2	: 34.4	: 32.9	: 31.4	: 32.2	: 33.4	: 33.4	: 34.5	: 32.5	: 28.6	: 33.0	: 31.9	: 29.1	: 32.0	: 33.0	: 31.5
1944	: 31.6	: 33.2	: 32.8	: 33.3	: 33.0	: 31.8	: 32.4	: 33.7	: 33.4	: 34.2	: 32.7	: 29.5	: 32.9	: 32.8	: 29.3	: 32.7	: 32.6	: 31.9
1945	: 32.0	: 32.6	: 32.7	: 33.5	: 32.5	: 32.1	: 33.5	: 33.8	: 32.7	: 34.4	: 32.5	: 28.9	: 32.3	: 32.2	: 30.3	: 32.5	: 32.7	: 32.2
1946	: 32.4	: 32.6	: 33.3	: 33.5	: 32.8	: 32.2	: 33.4	: 34.2	: 33.4	: 34.5	: 33.2	: 29.3	: 33.1	: 32.9	: 30.5	: 32.6	: 32.7	: 32.6
1947	: 32.1	: 32.2	: 32.3	: 33.7	: 32.5	: 32.3	: 33.1	: 33.3	: 33.3	: 34.2	: 32.3	: 28.7	: 32.9	: 32.7	: 29.5	: 32.7	: 32.6	: 31.7
1948	: 32.2	: 32.9	: 33.1	: 33.4	: 33.0	: 32.5	: 33.5	: 34.0	: 33.6	: 35.0	: 33.1	: 29.1	: 33.1	: 32.5	: 29.8	: 33.4	: 33.3	: 32.4
1949	: 33.2	: 32.9	: 33.2	: 34.0	: 33.3	: 32.8	: 33.8	: 34.3	: 33.6	: 34.0	: 33.0	: 29.5	: 32.7	: 33.3	: 29.9	: 33.2	: 32.0	: 32.0
1950	: 33.5	: 33.3	: 33.5	: 33.8	: 33.8	: 33.2	: 34.0	: 34.3	: 33.0	: 34.2	: 33.0	: 29.9	: 33.3	: 33.2	: 30.5	: 32.7	: 33.0	: 32.6
1951	: 32.9	: 33.3	: 33.4	: 33.7	: 32.8	: 32.5	: 33.8	: 33.8	: 33.4	: 33.3	: 33.3	: 28.8	: 33.0	: 33.3	: 30.2	: 33.7	: 33.3	: 32.4
1952	: 32.1	: 33.5	: 33.0	: 34.1	: 32.1	: 31.9	: 33.7	: 33.5	: 33.7	: 34.5	: 32.8	: 28.4	: 31.9	: 33.3	: 29.7	: 33.2	: 33.8	: 32.3
1953	: 33.0	: 33.5	: 33.3	: 33.9	: 33.0	: 32.8	: 33.8	: 33.9	: 33.3	: 34.5	: 32.7	: 29.8	: 33.0	: 33.1	: 30.4	: 32.6	: 33.8	: 32.6
1954	: 32.2	: 33.4	: 32.7	: 34.2	: 32.5	: 31.9	: 33.0	: 33.4	: 33.4	: 34.7	: 33.0	: 28.9	: 32.7	: 32.6	: 30.3	: 33.0	: 33.7	: 32.2
1955	: 33.3	: 33.4	: 33.7	: 34.2	: 33.6	: 33.3	: 33.8	: 34.1	: 34.0	: 34.1	: 32.8	: 29.2	: 33.2	: 33.5	: 30.2	: 33.1	-	: 32.6

Table 10.-- Cotton: Grade index of ginnings by States and United States, 1928-1955

Season:	State																	
	Ala.	Ark.	Calif.	Fla.	Ga.	La.	Miss.	Mo.	N.M.	N.C.	Okla.	S.C.	Tenn.	Tex.	Va.	Other	U.S.	
1928	101.9	102.2	98.8	101.7	97.0	98.6	101.1	101.2	88.4	100.1	99.0	96.0	97.8	98.5	99.1	99.6	82.8	99.2
1929	99.1	100.6	99.9	102.3	99.6	96.1	99.9	99.6	90.4	97.5	98.2	92.9	97.0	98.5	98.4	99.4	86.2	98.1
1930	99.4	100.5	99.8	101.3	100.9	98.6	99.3	100.4	97.2	101.0	99.4	97.2	99.4	100.7	99.8	98.1	95.8	99.5
1931	101.5	98.2	96.9	100.7	98.7	101.0	99.3	99.8	90.4	99.8	100.3	95.0	101.0	99.1	99.1	98.2	88.1	99.0
1932	100.2	100.7	97.9	102.9	98.9	99.4	100.7	99.4	92.4	97.5	100.0	98.6	100.0	97.9	97.6	98.6	92.0	98.6
1933	100.0	102.6	98.2	103.1	99.8	99.1	99.1	101.2	90.5	102.8	99.9	95.9	98.5	99.2	98.9	98.7	95.1	98.9
1934	100.6	100.6	100.6	103.0	100.4	100.9	100.9	101.3	95.4	104.1	99.3	92.9	100.5	100.1	101.4	98.6	94.3	100.5
1935	100.1	101.0	96.9	100.1	94.8	98.0	98.6	101.2	89.0	100.4	98.7	88.0	97.4	94.7	94.4	97.4	85.6	96.8
1936	99.3	100.3	95.8	99.9	99.2	99.1	98.6	99.1	92.8	99.6	97.2	92.6	98.5	98.3	94.9	97.5	93.7	97.3
1937	96.8	99.4	93.5	101.0	93.3	95.7	95.0	94.4	87.8	100.4	96.3	91.4	95.5	92.2	96.7	93.2	88.7	95.5
1938	98.6	100.6	97.3	100.7	97.9	98.7	96.2	97.6	93.9	100.3	97.1	99.9	99.3	96.9	99.0	94.7	91.6	98.2
1939	94.5	98.4	98.2	99.9	89.2	94.9	98.0	97.3	94.6	100.6	94.5	98.9	95.6	97.4	98.7	91.3	95.2	97.3
1940	97.0	95.1	95.7	101.3	97.6	97.3	96.9	96.7	90.5	98.0	95.9	93.2	96.8	93.5	96.7	92.2	90.9	96.2
1941	97.8	95.4	95.1	92.8	97.8	97.0	95.3	96.8	93.8	95.2	97.9	86.8	97.1	97.2	90.3	96.0	95.3	94.1
1942	97.1	96.8	95.8	97.0	93.3	96.0	96.4	97.6	93.1	97.4	93.7	89.8	95.4	96.2	92.7	88.0	92.4	95.0
1943	97.2	94.0	96.4	100.2	96.8	96.3	96.3	97.1	91.6	98.4	95.4	94.0	95.3	94.5	96.0	92.5	91.0	96.2
1944	95.9	92.8	94.9	91.4	93.3	95.2	95.8	95.9	93.0	95.6	88.7	87.8	90.8	95.6	92.0	88.7	96.0	93.4
1945	96.5	94.4	89.0	94.4	94.5	92.9	94.5	92.9	83.5	96.9	90.1	86.8	88.9	88.6	92.1	92.5	85.5	91.8
1946	96.1	92.1	93.0	97.3	97.6	95.5	95.8	96.6	89.5	98.3	93.2	90.3	94.9	94.0	94.6	93.8	87.3	94.5
1947	98.7	93.9	96.3	101.2	96.1	96.3	98.7	98.6	93.1	98.9	89.3	93.9	94.5	96.7	97.0	91.1	91.3	96.9
1948	95.4	97.9	93.4	99.0	95.4	95.3	98.3	95.4	90.8	100.8	92.4	95.4	93.5	94.7	97.6	92.4	88.8	95.7
1949	95.7	95.9	92.8	96.5	93.2	94.0	95.3	96.0	91.4	95.1	92.0	93.1	92.1	94.8	93.8	91.1	91.1	94.2
1950	95.9	99.6	92.7	93.3	97.2	96.0	97.4	95.1	89.4	97.5	94.2	93.3	93.7	93.6	95.0	92.2	88.6	94.7
1951	96.2	92.9	93.2	93.1	96.5	95.6	95.2	96.9	90.3	95.1	93.7	91.2	94.4	94.3	93.1	92.9	88.7	94.0
1952	97.2	95.3	96.9	92.3	96.1	95.9	99.0	99.2	95.2	98.5	93.0	96.1	93.8	96.8	95.1	91.4	97.3	95.8
1953	96.5	97.5	97.3	92.4	94.9	94.4	96.0	98.4	97.7	97.1	93.7	91.8	95.1	97.8	91.9	93.1	99.5	95.0
1954	97.6	95.3	94.7	92.8	97.6	97.6	95.6	96.5	92.7	95.9	95.2	96.2	96.4	96.0	96.0	93.5	94.5	95.6
1955	96.5	95.8	93.4	94.4	97.0	95.0	92.8	94.1	92.5	96.9	89.5	89.3	92.8	93.6	91.1	92.3	-	93.2

Good Middling White equals 105, Strict Middling White equals 104, Middling White equals 100, Strict Low Middling White equals 94, Low Middling White equals 85.

April 1956. United States Department of Agriculture, Agricultural Marketing Service, Cotton Division.

Table 11.-- Yield per acre, man-hours per acre, and man-hours per bale to grow cotton, United States, 1910-54

Period	: Yield	: Man-hours	: Man-hours	: Index No. of man-hours	
	: (pounds)	: per acre	: per bale	: Per acre	: Per bale
1910-14	: 201	116	276	100	100
1915-19	: 168	105	299	91	108
1920-24	: 155	96	296	83	107
1925-29	: 171	96	268	83	97
1930-34	: 184	97	252	84	91
1935-39	: 226	99	209	85	76
1940-44	: 260	99	182	85	66
1945-49	: 273	85	149	73	54
1950-54	: 287	70	114	60	41
(preliminary)	:				

Source: Labor Used for Field Crops. United States Department of Agriculture, Agricultural Research Service, Statistical Bulletin 144, June 1954. Tables 1 and 2.

Table 12.-- Number of farm operators by tenure, cotton States ^{1/}

Item	: 1930	: 1950	: 1954
All farm operators	: 2,657,663	2,135,023	1,852,172
All tenants	: 1,616,222	811,206	618,225
Croppers	: 720,254	305,810	238,421
	: Reduction		Reduction
	: 1930-54		1950-54
	: Percent		Percent
All farm operators	: 30.3		13.3
All tenants	: 61.8		23.8
Croppers	: 66.9		22.0

^{1/} Data are from the Census. Those 12 States in which more than one-fourth of the farms had cotton acreage allotments in 1954. They are Ala., Ariz., Ark., Ga., La., Miss., N. Mex., N. C., Okla., S. C., Tenn., and Tex.

Table 13.-- Cotton: Labor used per acre, 1950

State	Man-hours per acre						Yield per acre
	Pre- harvest	Harvest 1/				Total	
		Hand- pick	Hand- snap	Machine- harvest	All methods		
	Hours	Hours	Hours	Hours	Hours	Hours	Pounds
Illinois	35	36	26		33	68	190 2/
Missouri	36	52	38		47	83	278
Virginia	45	23			23	68	120
North Carolina	45	29	20		29	74	149
South Carolina	45	42			42	87	224
Georgia	46	41	32		41	87	228
Florida	50	44			44	94	226
South Atlantic	45.5	38.6	29.1		38.6	84.1	208
Kentucky	53	46	37		45	98	262 2/
Tennessee	53	54	44		53	106	310
Alabama	46	37	29		37	83	212
Mississippi	55	57	41	4.9	54	109	314
East South Central	51.7	49.8	37.9	4.4	48.3	100.0	280
Arkansas	37	54	40	4.9	51	88	313
Louisiana	38	51		4.7	49	87	287
Oklahoma	15	27	16	2.2	17	32	145
Texas	15	39	22	2.6	27	42	211
West South Central	20.2	41.1	25.0	2.9	31.7	51.9	229
New Mexico	46	63	46	5.8	59	105	526
Arizona	31	101	72	7.0	89	120	825
Mountain	36.8	86.5	62.4	6.2	78.1	114.9	713
California	40	92	70	7.0	62	102	805
United States	32.0	45.8	29.8	3.0	38.8	70.8	269

1/ Proportion harvested by each method from PMA Report, "Charges for Cotton Ginning and Marketing Services and Related Data, Season 1950-51," April 1951.

2/ Assumed.

Table 14.-- Cotton and manmade fibers: Consumption by use category 1/

Year	: National Cotton :		E. I. du Pont de		
	: Council of America:		Nemours Company, Inc.		
	Cotton	:	Cotton	:	Manmade
	<u>Million pounds</u>		<u>Million pounds</u>		<u>Million pounds</u>
1950	: 1,492		: 1,517		: 527
1951	: 1,438		: 1,465		: 548
1952	: 1,539		: 1,512		: 557
1953	: 1,635		: 1,621		: 525
1954	: 1,575		: 2/		: 2/

1/ Data from the National Cotton Council of America (as published in "Cotton Counts Its Customers") and E. I. du Pont de Nemours Co., Inc., (as published in the "Textile Organon," June 1955 supplement) differ because of differences in concept and classification.

2/ Not available.

3/ This classification was not used by the National Cotton Council.

United States Department of Agriculture, Agricultural Marketing Service,
Statistical and Historical Research Branch.

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Program Projection Report No. 5e

Grains and Forage

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Grains and Forage

SITUATION AND OUTLOOK

Nationally, the food and feed grain and forage crops are likely to remain in plentiful supply through 1960. Of course, weather may cause serious shortages in specific areas. But acreage and technological developments resulting in superior varieties and better cultural practices appear to be adequate under average production environments for a plentiful supply, even with a little increase in demand for some of these crops.

Food and feed grains and the forage crops are sufficiently different in specific areas of their outlook and situation that each of the three groups of crops will be discussed in its separate section.

FOOD GRAINS

Past Trends and Current Situation

During the past 30 years food grain production in the United States has ranged from 4.7 to 8.4 percent of the total gross production of farm crops. Wheat represents the largest commodity in the food grain group. Expressed as a percentage of the value of all farm products, wheat for food made up 4.3 percent as compared with 0.1 percent for rye, 0.6 percent for rice, and less than 0.05 percent for buckwheat.

Wheat production.--The total volume of wheat produced in the United States has gradually increased over the past 50 years. The first billion bushel crop was in 1915-16. From then until the depression period of the thirties the total domestic crop ranged from 600 to 900 million bushels, averaging about 800 million. The influence of the depression and drought resulted in smaller crops until the late thirties. Beginning with the 1944-45 season there was a series of billion-bushel-plus crops which lasted over a 10-year period except for 1 year, 1951-52. Since 1953-54 there has been some decline in production, but the total is continuing to be over 900 million bushels.

Production trends on a world basis have been somewhat comparable to those of the United States except for a sharper drop in acreage during the war years. Estimated world production exclusive of the United States during the period 1935-39 was 5.3 billion bushels. In the years 1945-49 the total dropped to 3.7 billion bushels, but by 1955 it had risen to 6.4 billion bushels.

Other food grains.--The production pattern for other food grains - rice, rye, and buckwheat - has followed different courses. Except for about 2 years during the forties, rye production trended down from a peak of 52.9 million bushels in 1942 to 18.1 million bushels in 1949. From 1950 through 1955 rye production has averaged a little over 20 million bushels. The trend in buckwheat production has been down since 1944.

Rice production was at record high levels during the war period and continued on in the postwar period until 1954. Table 1 shows the trend in rice production since 1920.

Table 1.--Rice production and yield per acre by areas for selected years 1920-55

Year	Production			Yield per acre		
	Southern	United	Southern	United	Southern	United
	States	California	States	States	California	States
	:1,000 Cwt.	:1,000 Cwt.	:1,000 Cwt.	: Pounds	: Pounds	: Pounds
1920	19,524	3,718	23,242	1,717	2,295	1,789
1925	12,706	2,160	14,866	1,694	2,097	1,743
1930	16,946	3,272	20,218	1,980	2,974	2,093
1935	14,423	3,330	17,753	2,012	3,330	2,173
1940	20,247	4,248	24,495	2,083	3,600	2,247
1945	24,456	6,262	30,718	1,926	2,566	2,029
1950	30,487	8,270	38,757	2,185	3,432	2,369
1951	35,177	10,676	45,853	2,091	3,347	2,292
1952	36,545	11,715	48,260	2,177	3,497	2,396
1953	40,504	12,257	52,761	2,309	2,857	2,417
1954	52,350	12,164	64,514	2,494	2,394	2,468
1955	42,461	11,186	53,647	2,799	3,329	2,895

The phenomenal rise in rice acreage and production since 1939 resulted from the strong demand for United States supplies during and following the Second World War. Current levels of production are lower and will have to continue down further if supplies are to be brought into balance with domestic and export demand.

Wheat utilization.--Since wheat is king of the food grains, major emphasis should be given to this crop. Figures on supply and disappearance show that less than half of the annual total supply of wheat is processed food. The remainder goes for seed, feed, exports, shipments to United States Territories, and military procurement. The supply of 1,891,668,000 bushels and disappearance of only 870,093,000 bushels for the 1954-55 crop year illustrates the current status of utilization in relation to supply.

Domestic utilization.--Most of the wheat for human consumption is used to produce flour for making bread and other bakery products. Smaller quantities are processed into breakfast foods and other products such as macaroni, spaghetti, and noodles. Annual consumption of wheat for food during 1946-51 averaged 482 million bushels, 69 percent of total domestic disappearance for all purposes. The quantity of wheat processed for food has remained relatively constant since the early twenties.

Large quantities of wheat and wheat byproducts are used for feeding livestock. Wheat used for feeding varies considerably from year to year. For example, during the years 1947 through 1951, the quantity of wheat fed ranged from 92 to 178 million bushels. Wheat compares favorably as a feed with corn and other grains. The highest feeding value is obtained when it is fed to poultry. Byproducts of the domestic flour milling industry constitute an important source of feedstuffs.

Minor quantities of wheat are normally used in the production of industrial products such as distilled spirits, starch, gluten, malt, paste, and core-binder flour. The bulk of wheat for industrial purposes is used for distilled spirits.

Exports of wheat.--Production of wheat in the United States is normally in excess of domestic requirements for food and other uses. Exports since 1920 have averaged about 20 percent of production, ranging from a high of 48 percent in 1951 to a low of 0.6 percent in 1935. During and since the war there have been sharp deviations from these averages. Total exports in 1954-55 amounted to 273,254,000 bushels. This is considerably below the large volumes exported in the early postwar period. During the 5 years 1945-46 to 1949-50 exports averaged about 415.5 million bushels, and for the 10 years 1945-46 to 1954-55 the average was 372.6 million bushels. While the recent drop in exports looks large, it is still high in comparison with the prewar level of 59.2 million bushels during the 5 years 1936-37 to 1940-41. To find a prewar year with wheat exports above 350 million bushels it is necessary to go back to 1920-21 when 369,538,000 bushels were sent abroad.

Consumption of wheat per capita.--As previously pointed out, the total consumption of wheat in the United States for food has remained relatively stable for the past 20 years. This is true because the decline in per capita consumption has about offset the population increase. Going back to 1909, wheat per capita consumption was 214 pounds. Since that time it has steadily declined, dropping to 122 pounds in 1955. Consumption of wheat cereals mainly as breakfast food has been much more stable beginning with 2.7 pounds in 1909 and ending with 3.1 pounds in 1955. The same trends in per capita consumption exists for other grain and cereal products except for rice, starch, and oat food products.

Rice utilization.--As shown in table 1, United States rice production has more than doubled since 1920. This tremendous increase has been the result of an upward trend in both acreage and yield. The big expansion came during and after the Second World War when there was a strong demand for exports. The supply and distribution pattern for a few selected years will illustrate the past trends and current situation in rice utilization.

Table 2.--Rice supply and distribution, United States

	Year beginning August			
	1939	1945	1950	1955
	1,000 Cwt.	1,000 Cwt.	1,000 Cwt.	1,000 Cwt.
<u>Supply</u>				
Beginning stocks	4,247	1,558	3,469	29,900
Farm production	24,328	30,718	38,757	53,647
Imports	649	217	787	100
Total	29,765	32,339	43,379	83,647
<u>Disappearance</u>				
Domestic				
Food	15,752	14,120	18,252	18,500
Industry	2,779	3,439	4,866	5,500
Feed and seed	1,515	2,056	2,575	3,947
Total	20,046	19,615	25,693	27,947
Exports	4,484	11,469	13,167	23,000
Total disappearance	24,530	31,084	38,860	50,947
End-of-year stocks	5,235	1,255	4,519	32,700

From 1939 to 1955 domestic disappearance of rice rose 39.4 percent. During the same period exports increased 412.9 percent and total disappearance more than doubled. Along with this phenomenal expansion in the use of United States rice, production has risen at an even greater rate which leaves stocks on hand a little more than 6 times what they were in 1940. Even if exports continue high it will take some time to bring supplies in line with demand.

Domestic per capita consumption is fairly well stabilized at a little over 5 pounds. From 1909 to 1920 rice consumption ranged from 6 to 10 pounds. During the 5 years 1945-49 the level was between 4 and 5 pounds. Since 1950 there has been a moderate increase to about 5.3 pounds.

Utilization of other grains for food.--Other grains used for food include rye, buckwheat, corn, oats, and barley. Per capita consumption of these commodities in 1955 and 1909 was about as follows:

Table 3.--Per capita consumption of rye, buckwheat, corn, oats, and barley

Commodity	: 1909	: 1955
	: Pounds	: Pounds
<u>Grain</u>	:	:
Rye	: 3.4	: 1.4
Buckwheat	: 2.3	: .1
<u>Corn products</u>	:	:
Corn meal	: 52.2	: 12.1
Corn cereals	: 1.3	: 1.5
Starch	: 1.0	: 1.8
Corn sugar	: -	: 3.6
Hominy and grits	: 4.5	: 2.6
Total corn	: 59.0	: 21.5
<u>Oat products</u>	: 3.2	: 3.4
<u>Barley products</u>	: 3.6	: 1.3

Marketing developments.--The decline in domestic per capita consumption of the major food grains is of great concern to the baking and cereal food industries. A number of promotion and advertising programs have been worked on by the industry but they have not resulted in halting the downward trend in consumption. Marketing efficiency in the bread and cereal industry has improved over the years. Many new products and variations of products have been developed. Marketing costs, however, have continued to rise due to increases in wages, overhead costs, and additional services. In the processing industry the outstanding trend is the disappearance of the small local industry and the substitution of large firms handling a wide variety of products operating on a regional or even national basis.

From the standpoint of local grain markets, the growth of the storage industry is a significant development. The large holdings of surplus stocks under price support, as well as Government-owned-stocks, is bringing about a tremendous expansion in elevator storage. This also involves increased risks and calls for more attention to quality maintenance.

Assumptions

In looking ahead to the pattern of production and disposition of food grains about 1960, it is necessary to bear in mind the important trends now affecting the situation. The most important ones are per capita consumption, exports, feed uses, and industrial and other uses. The simplest approach in projecting the conditions that may prevail in 1960 is by commodities.

Wheat.--The current level of wheat production is determined by present legislation and allotments and price support operations carried on according to law. Looking to 1960 it is assumed that Government programs and price support operations will continue in effect. The carryover of wheat at the beginning of the 1955 crop year was 1,021,575,000 bushels, as compared with a total disappearance of 870,093,000 in the preceding year. While surplus stocks are expected to decline during the next few years because of reductions under Government programs, it will probably take until 1960 to bring supplies and carryover stocks in line with domestic and export demand.

Production technology will continue to improve. New varieties and strains will be coming along. Yields per acre should continue their upward trend. This will be influenced most by the expansion in the use of fertilizers, moisture conservation practices, and irrigation. It must be recognized, however, that weather conditions in most of the commercial wheat areas are a controlling factor in yields and production. Since 1939 the average national yield per acre has definitely been rising. The lowest amount was 14.5 bushels in 1949 and the highest 19.5 bushels in 1942. In 13 of the past 16 years the national average yield has been over 16 bushels per acre. On the basis of these trends it would appear that yields by 1960 may average about 18 bushels, barring abnormal weather.

For more than 40 years the per capita consumption of wheat flour has been declining. The level has fallen from 214 pounds in 1909 to 122 pounds in 1955. The decline has been steady throughout the entire period except for an occasional year or so now and then. The important question is how much further will the per capita consumption decline? Wheat cereal products seem to be fairly well stabilized in the diet. There is also a feeling that some consumption of special products such as cake mixes, prepared cereals, and some sweet goods may be further increased. Adding both wheat flour and cereal products, the present level of per capita consumption is 125.1 pounds.

Increasing population is the major factor affecting the increased total use of cereal products for food. It is assumed present diet emphasis on protein foods, fruits, and vegetables will continue. It is also assumed that higher real incomes will effect an upgrading of diets in low- and middle-income brackets, resulting in increased consumption of high protein foods, fruits, and vegetables and a decline of per capita consumption of starchy foods. However, the per capita consumption level of wheat may be approaching a minimum level. By 1960 the total in terms of wheat flour may be about 120 pounds per person.

The amount of wheat going into export channels is not easy to forecast. Much depends upon the success of programs with friendly countries to expand trade and the possibility of working out acceptable trade relations with Communist-controlled nations. Considering all factors it would appear reasonable to assume that exports will be about 275 million bushels in 1960.

Rice.--Rice is currently in surplus supply, with acreage allotments and price supports the determining factor in the size of the United States crop. With a declining acreage and continued improvement in varieties, fertilizers, insect control, disease control, and cultural practices, yields will continue to rise, but not quite so rapidly as in the past 15 years.

Per capita consumption is expected to increase slowly and may reach about 5.5 pounds by 1960.

Other food grains.--Not much change is expected during the next 5 years in per capita consumption of buckwheat, rye flour, and corn food products. Such changes as may occur, however, will have little or no effect on the total supply and disappearance situation.

Projections

Since wheat and rice are the two major food grains the projected demand and disappearance for 1960 will be limited to these crops.

On the basis of the assumptions set forth and an expected population of about 178,000,000 people, the following quantities of wheat and rice will be needed in 1960:

Wheat Utilization in 1960

Food uses	497,688,000	bushels
Seed	60,000,000	do.
Industrial uses	200,000	do.
Feed	100,000,000	do.
Exports	275,000,000	do.
Total	932,888,000	do.

Rice Utilization in 1960

Food uses	20,000,000	cwt.
Industry	6,000,000	do.
Feed and seed	4,000,000	do.
Total domestic	30,000,000	do.
Exports	25,000,000	do.
Total disappearance	55,000,000	do.

FEED GRAINS

Grains and the byproduct feeds ordinarily provide nearly one-half of the total feed for livestock. Pasture, hay, and other forages furnish a little over one-half. Corn makes up about 60 percent of the total grain and the byproducts fed to livestock, but only about one-fourth of the total feed, including forages. Hogs and poultry are

produced almost entirely from grains and byproduct feeds, but cattle and sheep depend on pasture and other forages.

Past Trends and Current Conditions

Demand.--The four feed grains--corn, oats, barley, and sorghum grains--are marketed principally through livestock and livestock products. The actual cash sales of these four feed grains are comparatively small, making up only about 5 percent of the gross income of farmers. But cash receipts from the livestock and poultry that are produced from the feed grains account for approximately 50 percent of the total farm income.

Domestic demand for the four feed grains during the current year will be up from last year. During the last quarter of 1955, total disappearance of feed grains was 9 percent larger than in that same quarter in 1954, but slightly lower than the 1949-53 average. About 6 percent more grain was used in this country, while exports were more than double those of a year earlier.

Combined stocks of the four feed grains on January 1, 1956, totaled 116 million tons, 9 million above the previous record on that date last year. After allowing for a heavier disappearance of feed grains during the remainder of this year's feed season, the total carryover into next feed year is expected to be around 5 million tons above the 39 million ton carryover at the beginning of this season.

The large volume of 1955 feed grains placed under price support and smaller receipts of corn at primary markets in recent weeks have had a tendency to strengthen feed prices. Through December 15, 1955, farmers had placed more corn under Government loan than a year earlier, and a record quantity of sorghum grains. While the quantities of oats and barley were smaller than in 1954, they exceeded those in any previous year. So it now appears that the total tonnage of feed grains placed under loan from the 1955 crop will be above the 14.4 million tons from the 1954 crops, which was 12 percent of total production. In addition to the 1955 corn placed under loan, the Commodity Credit Corporation owned 760 million bushels of corn on January 1 and 76 million bushels of old corn were re-sealed on farms.

Production.--The production of feed grains has increased steadily since the early part of the 19th century. Technological improvements, coupled with the improvement in seed--including the development of corn hybrids and new varieties of grains adapted to the various regions, brought about through research and education--have accounted for most of the changes.

The acreage in feed grains reached a record high in 1932, but has declined since then. In 1948-52 the acreage was about one-eighth smaller than 20 years earlier, but production, reflecting higher yields to the acre, increased nearly one-fourth.

The 1955 production of feed grains was estimated in the December annual crop summary at 130 million tons, 11 percent above 1953 and only a little below the record of 1948. The big crop this year resulted from the increased acreage, a generally favorable growing season, and a little higher than average yields.

The average of 0.88 ton of feed grains produced per acre in 1955 was 6 percent below the record of 1948 and slightly below 1952, but higher than in other recent years.

The total acreage in feed grains has increased 12 percent since 1953. This increase, however, was entirely in oats, barley, and grain sorghums, possibly resulting from diversion from wheat and cotton acres. Corn acreage, on the other hand, has been comparatively stable since 1951. The 1955 acreage harvested dropped slightly below 80 million, which it has not done since 1893. The 1955 acreage of oats and sorghums, on the other hand, were the largest in the 27 years of record, and the barley acreage was the largest in more than 10 years.

Developments in marketing.--Supplies of the four feed grains are larger than in any past year, and are now estimated at 170 million tons, 15 percent above the 1949-53 average. The 1955 supply includes the crop of 130 million tons, a record carryover of 39 million tons, and an allowance for imports of a little less than a million tons. Total disappearance of corn, oats, and barley was 6 percent larger during the last quarter of 1955 than during the same period in 1954.

Exports of the four feed grains were heavy during the last half of 1955 and early part of 1956. They were double those of the same period in 1954. The bulk of the feed grains sold for export were from CCC stocks, which have moved at lower prices than a year earlier.

Imports of feed grains have declined in the past 2 or 3 years as less oats and barley have been shipped from Canada. Imports in 1955-56 are likely to be lower than the 931,000 tons imported in 1954-55 and much below the heavy import of 2.2 million tons in 1953-54. (Imports in recent years have been less than 1 percent of production.)

Farmers in 1955 again placed large quantities of feed grains under loan and purchase agreement. It appeared that the total tonnage of feed grains placed under price support from the 1955 crops would be above the 14.4 million tons from the 1954 crops.

Prices of feed grains were generally lower in 1955 than a year earlier, with prices in mid-December averaging 18 percent lower. The greatest price increase among feed grains has been in corn. The 1955 crop was of better quality than the 1954 crop.

Table 4.--Feed grains: Production, United States, 1920-55

Year	Corn		Oats	Barley	All sorghums	Total
	All purposes ^{1/}	For grain			for grain	four feed grains ^{2/}
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 tons
1920	3,070,604	2,695,085	1,444,291	171,042	90,284	115,719
1925	2,798,367	2,382,288	1,405,268	192,466	58,871	107,105
1930	2,080,130	1,757,297	1,274,592	301,619	37,561	86,928
1935	2,299,363	2,001,367	1,210,229	288,667	57,610	92,287
1940	2,457,146	2,206,882	1,246,450	311,278	85,824	98,617
1945	2,868,795	2,577,449	1,523,851	266,994	96,063	113,806
1950	3,057,803	2,760,374	1,410,464	303,533	233,278	122,002
1955*	3,185,000	2,856,767	1,636,030	386,551	226,599	130.3

1/ Includes corn harvested for grain, and grain equivalent of corn utilized as silage, hogged, grazed, and in forage.

2/ Includes production of corn for all purposes.

* Preliminary

(Grain and Seed Statistics, Statistical Bul. 159, p.7, USDA, March 1954)

Table 5.--Feed grains: Production by States and regions, 1948-1952 average

Division	Corn ^{1/}	Oats	Barley	Sorghum grain	Total
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
North Atlantic	3,032	992	212	-	4,236
North Central East	31,292	6,925	297	1	38,515
North Central West	39,265	11,064	2,567	1,111	54,007
South Atlantic	6,274	758	178	32	7,242
South Central	9,435	827	119	2,701	13,082
West	750	864	3,042	390	5,046
The United States	90,048	21,430	6,415	4,235	122,128

1/ Production for all purposes

(1954 Yearbook separate number 2555, pp. 403 to 413)

Assumptions

The situation facing the United States today and within the next 5 years is predicated upon the assumption that there will be peace and, although a continuation of a form of cold war, there will not be an outright shooting war. With a strong economy and high rate of employment, the population will continue to increase at about 2 to 3 million per year.

With these conditions prevailing, technology in grain production will continue to improve and yields will gradually increase. With continuing support by the Government of improved marketing research, education, techniques and facilities, along with competition, promotion, and advertising in the trade itself, we are bound to see many more innovations in the whole field of marketing.

With all these improvements in grain production, processing, and handling, coupled with a steady increase in population, the demand for animal products is likely to increase over the next 5 years as much or more than it has since the Korean war.

Projections

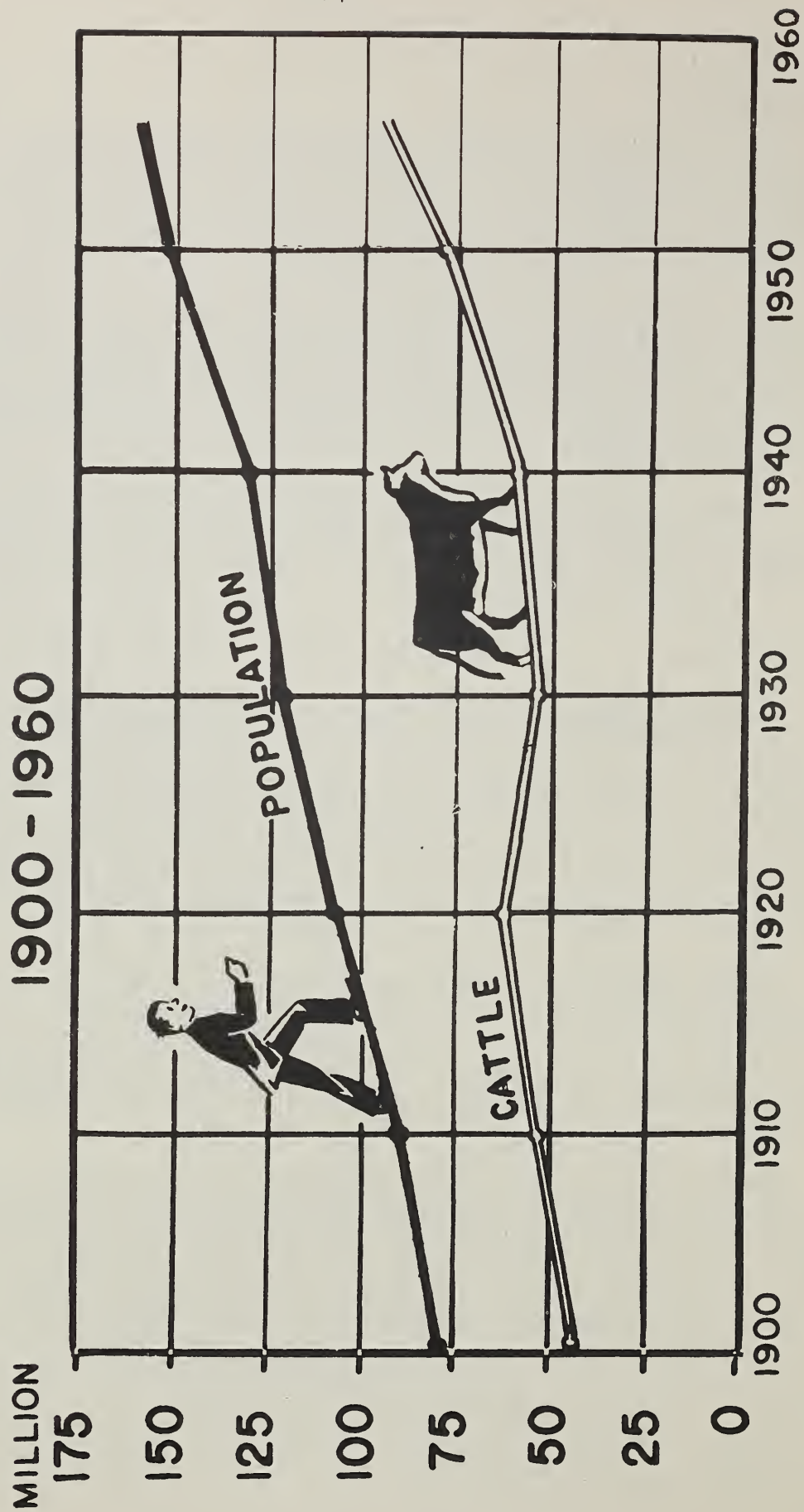
Domestic demand.--The increased efficiency in livestock production, through technical developments in livestock feeding, is making possible increased production of livestock and livestock products per ton of feed consumed. Livestock numbers have been increasing with increasing feed supplies, but at a slower rate. The prospective supply of feed, particularly the concentrates, per animal unit for 1956 is 7 percent greater than last year and a little above the previous record of 1949-50. While feed supplies per animal unit have trended upward, the rate of feeding per animal unit has barely been maintained.

These recent developments have a bearing on the feed situation in 1956-57 and years ahead. Feed grain acreage is expected to be maintained at a high level again this year. With the big carryover stocks in prospect, total feed concentrate supplies are expected to continue above average in 1956-57 and to remain large for the next few years if normal growing seasons continue.

Increasing consumer demand for beef would encourage a large production of cattle and of beef. The production of beef, unlike production of pork, cannot be computed independently for the period through 1960, owing to the trend of the cattle cycle. Even with the historical fluctuations of the cycle, everything points to a gradual rise in cattle numbers, when we consider the unusually strong demand for beef coupled with an abundant feed supply. The two things on the horizon that might cause a downtrend would be, first, for the heavy slaughter of cows and heifers, occurring in 1955, to continue through 1956-57; and second, for consumption of beef in the next 5 years to drop from the high of 81 pounds consumed per person in 1955 to a predicted 74 pounds. The latter is questionable, especially if incomes remain fairly stable.

TRENDS IN POPULATION AND CATTLE NUMBERS

1900-1960



Feed grains, even though in large supply, could have some serious competition in cheap forages. It is a well-known fact that 100 pounds of total digestive nutrient can be produced much cheaper in high quality grass and other forages than in grain. This could be a serious competitor if the cost-price squeeze continues to force farmers to cut down on every possible corner.

Foreign demand.--While only a small portion of United States feed grains are exported, there are some indications pointing toward an increase in exports. These increases in the world exports of feed grains during the next few years are due to the following:

- (a) Many importing countries are striving to increase their food grains production first, and that means their out-turn of feed grains will be less than it otherwise would be.
- (b) Livestock numbers are increasing in importing countries, and these countries are also feeding heavier per animal unit.
- (c) The market for certain mixed feeds, particularly poultry and dairy feeds in Latin America and elsewhere, should expand.

The United States should share in the larger world exports of feed grains. One factor which, for instance, should contribute to larger shipments of United States corn is that Argentina will provide little competition, owing to the short crop last year. The disturbed political condition in Argentina is also thought by some to slow down production.

Special export programs now in effect by our Government should also enable more grain to move. Some of these programs are:

- (a) Title I, Public Law 480, provides a means for exporting a number of agricultural commodities, including feed grains, for the "local currency" of importing countries. (Last year 158,000 short tons of the four feed grains were shipped, and tons shipped should increase this year.)
- (b) Feed grains are also being shipped under barter transactions. (Under the Commodity Credit Corporation Charter Act, agricultural commodities may be exchanged for strategic materials, goods, or equipment required by United States Government agencies.)
- (c) Feed grains will also continue to move under the International Cooperation Administration programs.

In addition to the foregoing, the CCC is selling feed grains in line with world prices. So, with these special and regular channel movements, the United States may well increase exports of feed grains for many years ahead.

Legislation.--The acreage reserve plan, along with other phases of the pending Agricultural Act of 1956 (soil bank), is an unknown quantity at this stage. However, the act is intended to reduce surpluses and may have far-reaching effects on some of the feed grains if many of the reported restraints are put into the law.

Production ahead.--Technological progress in production of farm crops is certain to continue. Yields per acre have been gradually going up and probably will average a little higher in 1957-62 than now. Of course, acreages to be devoted to production of feed will be subject to any changes in farm policy, and restrictions on acreages would naturally reduce annual production of those crops below that otherwise to be expected. However, it appears that total supplies of feed grains will continue large for a number of years. Under almost any agricultural program, the restrictions will probably be necessary on wheat and cotton. If so, that would tend to a degree to maintain feed grain acreages. With reasonably favorable seasons and assuming a good carryover or reserve of feed grains of around 25 million tons annually, unforeseen emergencies could be met. So supplies of feed grains in prospect for the next 5 to 8 years seem to be adequate to support a high volume of livestock production.

Because legislation is incomplete, no precise projections of prices of feed grains through 1960 can be made. Assuming that the high level of feed production is continued, it is likely that prices will be somewhat below their average for the last 5 years. Marketing of feed grains being almost wholly tied to livestock production and demand for livestock products, the outlook is reasonably favorable, assuming, of course, that employment remains high and the general economy continues stable.

FORAGE CROPS

Past Trends and Current Status

The term "forage" as used here embraces range and pasture, hay, silage, stover, and straw. To measure changes in their production, acreage figures seemed to be the most useful common denominator.

Land uses.--Impressive features of the trends leading to the present pattern of land use for forage production are these:

- (a) The stability of total land in agricultural use.
(Range plus all farmland)
- (b) The sharp decline in reliance upon range.
- (c) The moderate increase in total farmland.
- (d) The even more moderate increase in cropland.
- (e) The substantial rise in pasture acreage.
- (f) The stability of pasture and range taken together.

Acreage in agricultural use.--The total land area of the United States is 1,904 million acres. Of this the total available for agricultural use,

including land in farms and rangeland grazed, has for 40 years remained remarkably stable at a level just below $1\frac{1}{2}$ billion acres. The low point--1,424 million acres--occurred in 1930; the high--1,479 million acres--in 1910.

There has, however, been a steady increase of land in farms, rising from 879 million acres in 1910 to 1,159 million in 1950. Concurrently, the use of rangeland has steadily declined--from a level of 600 million acres in 1910 to 290 million acres in 1950.

Table 6.--Land use - United States Total

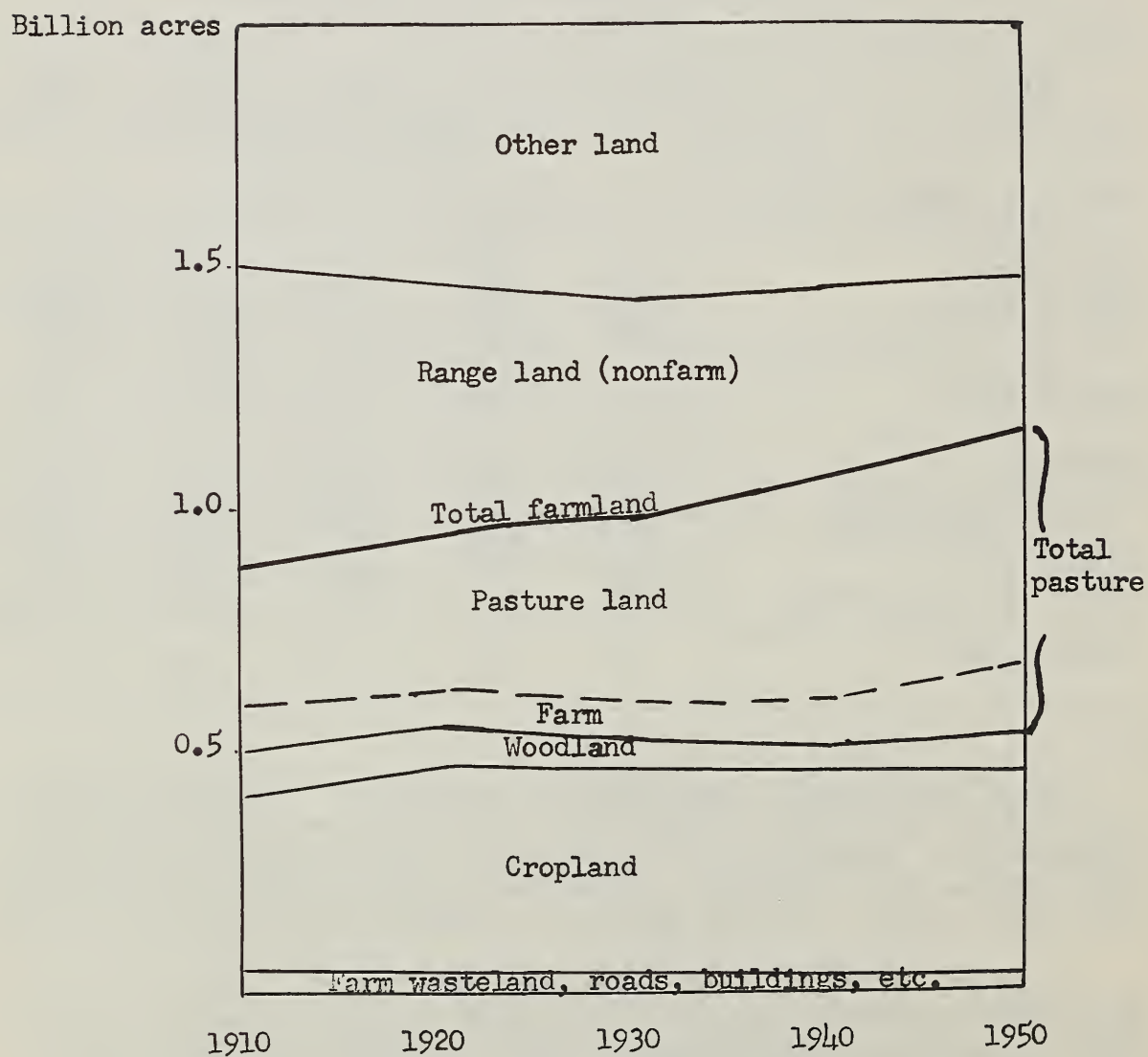
Land	: 1910	: 1920	: 1930	: 1940	: 1950
	(million acres)				
Total land (United States)	1,904				
Range grazed	600	502	437	382	290
Land in farms	879	956	987	1,061	1,159
Land used for agriculture	1,479	1,458	1,424	1,443	1,449
Land in crops	347	402	413	399	409
Pasture	284	328	379	461	485
Farm woodland grazed	98	77	85	100	135
Total farm pasture	382	405	464	561	620
Range grazed	600	502	437	382	290
Total acreage grazed	982	907	901	943	910
Land in farmsteads, roads, waste, etc.	57	58	45	44	45

Use of land brought into farms.--In addition to these 280 million acres brought into farms, another 12 million acres were recovered for productive use from that body of farmlands classed "lands in farmsteads, roads, waste, etc." Together, these developments provided an additional 292 million acres. It is interesting to note the use made of this land.

The equal of 201 million acres went into pasture. Some 62 million were added to cropland and 29 million acres to farm woodland. All the while the acreage of farm woodland used for pasture was rising--by 37 million acres--from 98 million in 1910 to 135 million acres in 1950.

In total these shifts increased the farm pasture acreage by 62 percent--from 382 million acres in 1910 to 620 million in 1950.

Land Use--United States Total



Diminishing feed requirements for horses and mules.--A factor that accents these changes in land use is found in the release of farmlands formerly needed but no longer required to produce feed for horses and mules. In 1910, 88 million acres of crops were required for this purpose, but this figure had declined to 19 million by 1950. In effect, this adjustment released 69 million acres of crops to other classes of livestock.

Acreage required to produce feed for horses and mules
(million acres)

<u>1910</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>
88	90	65	43	19

Hay.--The tonnage of hay produced has risen from a level of 75,184,000 in 1910 to virtually 110 million tons in 1950, but the rise has not been steady.

Assumptions

The following assumptions are meant to serve as part of the basis for the projections discussed in a later section.

1. Future legislation will directly stimulate grassland farming through the diversion of cropland to grass crops and, indirectly, by operating to hold grain prices above their natural competitive level. Both will cause livestock producers to give more consideration to forage.
2. Technological developments will allow additional forage production efficiencies.
3. Labor costs are expected to remain relatively high, thus highlighting the laborsaving features of the grassland system of feed production.
4. A growing demand for livestock and livestock products will result in greater emphasis on forage production and utilization.

Projections

Dependence upon forages is expected to continue expanding--most likely at an accelerated rate. This conclusion is based on the view that considerations of labor, conservation of resources, and production adjustment in cash crops leave scarcely no other course. At the same time, important technological advances are stimulating the trend toward increased production and use of forages.

Laborsaving, conservation, and production adjustments.--Of the labor-saving feature it may be said that this has been an immediate factor in the livestock producer's increased reliance on forage crops. Recognizing that row crops can be handled to conserve soil and moisture, the fact remains that the forage crops perform this role almost automatically with the exception of mineral removal. As for the influence of adjustment programs, it is to be recognized that the farmer has but three uses of diverted acres; the land may be used for "grass," timber, or left idle. Of these, grass promises the earliest return. Moreover, any national production adjustment applied to grain crops operates to raise grain feed costs, thus forcing the livestock man to rely more heavily on forages.

Technological advances.--Technological advances which are stimulating the swing to forage crops fall into three general groupings: soil treatment, improvement in the breeding and selection of the crops themselves, and management--including the utilization of forages.

Soil treatment.--Until recently few farmers were disposed to fertilize and lime their grass crops. Even so these crops were often found on the poorer lands on the farm. But this is changing. With repeated demonstrations that proper soil treatment pays and pays well, the willingness of the operator to apply treatments has turned sharply upward. This change has come primarily since the Second World War and seems to be gaining momentum. Even 50 or 100 percent increases in production per acre are commonplace.

Breeding and selection.--It is a very significant fact that the plant breeder has so recently applied his science to the forage crops that only the first fruits of this effort are now appearing on the scene. The last 5 years have brought several varieties of alfalfa that are definitely superior. There are new and better clovers, enough only to indicate the possibility. The same may be said of grasses. Agronomists hold the view that improvement fully as substantial can be achieved in the forage crops as has been accomplished with others, such as grains, cotton, and tobacco, where more intensive research has been done. Time is the chief need at present. The effect on total output can be considerable.

Management.--With respect to management there are varied and important opportunities for improvement. These include, for example, selection of the best grass and companion legume for a given situation, improved seeding methods, proper soil treatment, weed control, and more efficient harvesting. These apply whether the crop is used for pasture, hay, or silage. Some of these measures serve to reduce failures, others improve value, and all increase production per unit, thus lowering costs.

Demand.--With a rising population and equal or rising living standards, the demand for meats, milk, and other livestock products will stimulate growing interests in grassland farming.

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Program Projection Report No. 5f

Fruits, Vegetables, and Potatoes

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DISTRIBUTION: To State and assistant State extension directors; State and assistant State leaders and district agents in agricultural, home demonstration, and 4-H Club work; extension editors; and subject-matter specialists and economists concerned.

Fruits, Vegetables, and Potatoes

This report, prepared as an aid in planning extension programs, gives special attention to commodity groups and to a number of individual commodities. The data presented and summarized are presented in greater detail in various United States Department of Agriculture publications. The report summarizes past trends in the production, consumption, and marketing of fruits and vegetables. It also projects some recent trends for a period of 5 years, within the framework of the general assumptions serving as a basis for program projection activities.

It should be recognized that the levels and trends of consumption and production discussed are the results of many factors, some of which are mentioned in the discussion of individual commodities. These trends have been affected also by numerous factors not mentioned in the discussion of each commodity or commodity group; including programs of production research, marketing research, utilization research, foreign and domestic market expansion, surplus removal, price support, education, and promotion sponsored by public and private agencies. In the projections, effects of these activities similar to those of the recent past are assumed. However, the full effects of recent expansions in some of these activities may not be reflected yet in the data on which projections are based. Also, changes in emphasis and possible expansions in some of these programs have not been anticipated in these projections.

DECIDUOUS FRUITS AND EDIBLE TREE NUTS

Per Capita Consumption Has Declined

From 1940 to 1950 per capita consumption of deciduous and small fruits declined from 134 pounds to 114 pounds and by 1954 declined further to 108 pounds. Most of this decline was in the consumption of fresh fruit, from 88 pounds in 1940 to 62 pounds in 1954. Dried fruit consumption also declined from 23 pounds in 1940 to 14 pounds in 1954. During this period consumption of canned fruit increased from 20 pounds in 1940 to 23 pounds in 1950 and 21 pounds in 1954. While canned juices and frozen fruit are a rather small part of the consumption of these fruits, consumption in these forms has increased in recent years. In 1954, consumption of frozen fruits was 3 pounds and canned juices 8.3 pounds. Apples accounted for about 10 pounds of the 26-pound decline in fresh consumption of these fruits from 1940 to 1954. The remainder of the decline was distributed among the other fresh fruits.

Consumption of several canned fruits has increased, including apples, berries, cranberries, peaches, and pears. Canned pineapple consumption has declined.

Among the fruits gaining in per capita consumption in the frozen form are blackberries, strawberries, and cherries.

Some further declines in per capita consumption of fresh fruits and increases in consumption of canned and frozen deciduous and small fruits may occur during the next 5 years. Total consumption of these fruits will probably change only slightly from present levels during this period.

Exports of fresh and processed deciduous fruits have been reduced sharply since before the war. Prior to the Second World War, over 8 percent of all fresh deciduous fruit sales and over 25 percent of all processed deciduous fruit sales went to export markets. At present only about 3 or 4 percent of the fresh deciduous fruit, and about 12 percent of the processed deciduous fruit are exported.

Recent steps toward liberalization of imports of deciduous fruits and fruit items from the United States may increase the amount of exports of these products during the period ahead. Also, as European economies improve, there may be less restriction on fruit importations from the United States.

Total Production of Deciduous Fruits Has Changed Little in Recent Years

Total deciduous and small fruit production is at about the same level as it was 15 years ago and is expected to remain at about this same level for the next few years. Lower levels of production since 1940 for apples, peaches, prunes, and figs have been offset by increases in pears, grapes, cherries, and cranberries. Apricots, plums, strawberries, and olives are at the same level as 15 years ago; however, strawberry production is expected to increase sharply in the next few years.

Total tree-nut production (almonds, walnuts, filberts, and pecans) has increased approximately 40 percent during the past 15 years with some increase in each of the four kinds. This trend will probably continue upward for almonds, walnuts, and possibly pecans, with filberts remaining at about the current level.

It can be expected that as more producers take advantage of new technology, production efficiency will increase. A trend toward larger operations utilizing mechanical and laborsaving equipment has aided in bringing about greater efficiency in production. Aiding in the efficiency development has been the widespread use of improved varieties, fertilizers, use of herbicides and hormones, and increased use of irrigation. While it is difficult to predict the effect these changes will have on total production during the next 5 years, no revolutionary changes are expected.

Marketing Methods Are Changing

Developments in marketing such as improved methods in harvesting, handling, packaging, and merchandising have helped improve the efficiency of fruit marketing. It is expected that during the next 5 years, there will be more precooling, increased truck movement, more consumer packaging, more sales at supermarkets and less through neighborhood stores, and more ready-to-cook or semiprepared products available to housewives. Such developments

that reduce costs and better satisfy consumers will contribute to a strengthening of demand for these fruits.

Apples

Apples account for about a third of the noncitrus fruit total and provide almost half the fresh market supplies of domestic noncitrus fruit. The production trend for apples has been moderately downward since 1939, and appears to be leveling off at 15 to 20 percent below the production potential of 1939. The decline in apple production has been accounted for mostly by the removal of low-yielding orchards and less desirable varieties. Despite the downtrend in production, processing has been increasing, particularly the canning of applesauce in the east.

The production of apples in New England has increased moderately since 1939, in contrast with moderate to sharp declines for all other important producing areas of the east. New York is down about a fifth and the Appalachian area (Pennsylvania, Maryland, Virginia, and West Virginia) is down about a fourth. These areas have probably leveled off in production.

Michigan production has fluctuated between 5 and 12 million bushels since 1939 but production capacity has declined only slightly. This trend is expected to hold about level or increase moderately during the next few years. The total production level for the other Central States is down about a third with considerable variation among the States.

Washington State produced a record crop of $35\frac{1}{2}$ million bushels in 1950. The following four crops were each less than 25 million bushels, but the 1955 crop is estimated at 31 million. Production capacity in this State declined moderately between 1939 and 1943, but has been increasing since 1943, and is now about the same as in 1939. This slight upward trend is expected to continue during the next few years.

California apple production increased from 1939 to 1947 when a record crop of 11 million bushels was produced. The trend has leveled off moderately below the peak of 1947 and is expected to hold about steady for a few years. Each of the other Western States shows a decline since 1939 and a slight to moderate decline can be expected for the next few years.

Per capita consumption of fresh apples reached an all-time low of 19.3 pounds in 1954 after a rather steady decline from the end of World War II. Canned apples and sauce have increased from 1.0 pound per capita in 1945 to 2.5 pounds in 1954, compensating for part of the decline in per capita consumption of fresh apples. Canned apple juice, a small part of total consumption, reached a record high of 0.7 pounds per capita in 1954. Consumption of dried apples, 0.1 pound per capita, has changed little in recent years while consumption of frozen apples has declined from a high of about 0.6 pound to 0.3 pound since the end of World War II.

Peaches

Sales of fresh peaches amount to about half of production and are second only to sales of fresh apples in tonnage. Production increased sharply from 1939 until 1946 and has since declined to a level slightly below that of 1939. In the spring of 1955, a disastrous freeze in the Southern States practically wiped out their peach crop and killed or damaged a great many peach trees. The production capacity in these States will be reduced for at least 2 or 3 years.

The potential level of production in California, where about one-half of the United States total peaches are grown, has increased moderately during the past 10 years. About two-thirds of the peaches produced in California have been clingstones, used principally for canning. In order to hold production of clingstones within the limits of market requirements, California growers have put into operation a "green drop" or production control program in recent years.

The production level in the important Western States of Colorado, Washington, and Oregon increased between 1939 and 1946 but has not changed significantly during the past 10 years. No important changes are expected in these States during the coming few years except some possible expansion in the Grand Coulee project of Washington.

Production trends in nearly all areas of the Northeastern and North Central States have been moderately downward except in New Jersey, which has shown a moderate increase.

The Southeastern and South Central States have been decreasing in production levels at rates from moderate to rapid. The 1955 freeze in these States will no doubt accelerate the downtrend---at least temporarily.

Although per capita consumption of fresh peaches declined after the war, it has been steady at about 10 pounds for several years. Also, per capita consumption of canned and frozen peaches seems to be steady. Recent trends indicate no substantial change in demand for peaches during the next 5 years.

Pears

Pear production increased moderately between 1939 and 1947 and has since declined to about the same level as in 1939. The three Pacific Coast States produce more than four-fifths of the Nation's pears, and the proportion is increasing. Little change is expected during the next few years in overall pear production. The pear crops in California and Oregon have increased about 50 percent since 1939, while the Washington crop has not changed significantly. The increases in California and Oregon have been offset by decreases in nearly all Eastern and Central States.

Consumption of fresh and canned pears has been rather constant at about 6 pounds per capita during the last 5 years.

Grapes

The level of grape production in the United States increased about a fourth between 1939 and 1951. Since 1951 the trend apparently has turned downward. California continues to produce about nine-tenths of the United States total grapes. All three classes of California grapes (wine, table, and raisin) show about the same trend pattern since 1939---an increase between 1939 and 1951 and a moderate decline since 1951.

Grape production in Washington has increased steadily for more than 20 years and is now exceeded only by California and New York. The present level is more than four times as large as it was 15 years ago. This upward trend will probably continue for a few years. Production in the Great Lakes States varies widely from year to year owing to the effects of weather, but the trend has been upward since 1939.

Consumption of fresh grapes and raisins shows no definite trend in recent years. With the development of frozen concentrate, grape juice consumption has increased substantially and probably will continue this trend.

Cherries

The trend in production of sweet cherries was sharply upward until 1949 and has not changed significantly since. Little change is expected in the near future.

The production potential for sour cherries has increased steadily in the past 16 years and is now about 50 percent higher than in 1939. Actual production has fluctuated widely from year to year because of damage from freezes, frosts, and storms. The biggest crop to date was in 1951, when about 158,000 tons were harvested, including 8,700 tons which were not utilized because of low prices. In 1952, 1953, and 1954, production ranged from 108,000 to 132,000 tons but in 1955 again reached the 150,000 ton mark.

A moderate upward trend in production of sour cherries is expected for several years because of extensive recent plantings in Michigan and New York.

Consumption of fresh cherries declined slightly after the war and has remained around 0.7 and 0.8 pound per capita for several years. Canned cherry consumption shows no definite trend. Frozen cherries rapidly increased in importance, from a consumption of 0.16 pound per capita in 1937 to 0.60 pound per capita in 1950. Per capita consumption of frozen cherries has had no definite trend since 1950.

Plums

Plum production is estimated only for California and Michigan. California produces more than nine-tenths of the total. The production level is moderately higher than in 1939. Very little change is expected in the near future.

Prunes

Production has declined about a fourth since 1939 but is expected to change very little in the next few years. Sharp drops occurred in Washington, Oregon, and California. The level in Idaho changed very little, but Idaho accounts for only about 5 percent of the total production. Practically all of the California prunes are dried, while most of the prunes in Washington, Oregon, and Idaho are sold fresh or canned.

Apricots

The level of apricot production has declined about a fourth since 1939. This decline is expected to continue for some time but at a slower rate. California produces about nine-tenths of the United States crop. One-fourth to a third of the total crop is dried--all in California.

Cranberries

Cranberry production has trended upward since 1939. This trend probably will continue for a few years. Processing is the most important factor in the increase of cranberry production. Prior to 1934 processing was not important, but this utilization has since expanded rapidly and now accounts for more than half of the production. The marketing season is extended throughout the year by the canned pack of cranberry products. Massachusetts has consistently produced more than half of the United States crop but the proportion of production in Massachusetts is decreasing as Wisconsin, Washington, and Oregon become more important producers. New Jersey holds at about the same level. Wisconsin has more than doubled in production since 1939, while Washington and Oregon crops are about 5 times as large as in 1939.

Tree Nuts

Total production of the four major tree nuts (almonds, walnuts, filberts, and pecans) has increased approximately 40 percent during the past 15 years, with some increases in each of the four kinds. This trend will probably continue upwards for walnuts, almonds, and possibly pecans. Filbert production is expected to continue at about the present level in the next few years.

New soft-shell varieties, improved insect and disease control, greater use of fertilization and irrigation, and favorable weather could result in increased total production with concurrent lowered production costs per unit.

Demand for the major tree nuts probably will follow the recent trends.

CITRUS

Consumption Has Shifted to Processed Fruit

While per capita consumption of fruits in total has remained quite steady in recent years, there have been shifts among the fruits. Citrus

experienced a rather steady increase in per capita consumption until 1947. From the peak of 93.9 pounds reached that year there was a decline. From 1951 to 1954 citrus consumption per capita remained rather steady, between 81.7 and 84.7 pounds per capita.

Fresh sales of citrus fruits increased steadily from about the turn of the century until the period from 1943 to 1946. Since 1946, total fresh sales of citrus have declined moderately and are now at about the same level as in 1939. Processing of citrus fruits, on the other hand, has continued to increase steadily, and the level is now about four times that of 1939. Until about 10 years ago, canned single-strength juice was the principal product, but in recent years frozen concentrated orange juice has become the most important citrus product. Frozen concentrated orange juice now accounts for more than a third of all oranges produced in the country and about two-thirds of all oranges processed.

Immediately after World War II, exports of citrus from the United States declined from about 12 million boxes in the crop year 1946-47 to about 7 million boxes in the year 1948-49. Since then exports have expanded, reaching a total of nearly 12 million boxes in the year 1952-53. World production of oranges has increased from an average of 208 million boxes for 1935-39 to about 350 million boxes in 1953, with about half the increase in North America and most of the remainder in Europe, South America, and Africa.

Important Changes Have Taken Place in Production

The total production of citrus fruits has increased 70 percent since 1939, despite severe freeze damage in several producing areas during this period. Florida continues to expand in bearing capacity, both from new plantings and increasing size of trees. The trend in California for oranges and grapefruit is moderately downward and for lemons, about steady. Texas citrus trees of all kinds were nearly wiped out in February 1951. The level of production was reduced from about 30 million boxes to less than 1 million but has been reviving since the freeze, reaching 4 million boxes in 1954-55.

Production of most types of oranges in Florida continues sharply upward. In California the production trend has turned moderately downward for both navels and Valencias. California Valencias are essentially the only fresh oranges available during the summer and early fall. This has been a great advantage to California in marketing her Valencia crop. This advantage has been sharply reduced by the competition of frozen orange concentrate from Florida.

The production of grapefruit in the United States increased rapidly from 1939 until 1949 when the upward trend was halted by a freeze in Texas. Another Texas freeze in 1951 killed most of the trees.

The level of lemon production has not changed significantly during the past 15 years. A slight to moderate increase is possible in the next few

years, since the increase in population should increase the demand for fresh lemons as well as the new processed products such as frozen lemonade concentrate.

Production May Expand Further

Production of oranges is expected to continue to trend upward over the next few years. Many new trees have been planted in Florida and Texas during the past 5 years or more. As more young trees start bearing and the bearing surface of older trees increases, production of oranges in these States may be expected to rise further. In California, on the other hand, many groves have been removed from land now being used for new housing, industry, and other purposes. Even so, resulting decreases in production are expected to be more than offset by expansion in Florida and Texas, especially the former.

Some further upward trend in the production of grapefruit over the next few years seem likely. Most of the increase is expected to consist of seedless varieties of white grapefruit and of red and pink grapefruit. Recently planted groves in Texas and Florida are starting to bear. As more young trees start to bear and older trees, especially in Florida, increase in bearing surface, further gains in production can be expected. Changes in other States will probably be small. The upward trend in total grapefruit production will probably be slower than for oranges.

New Technology Will Affect Production and Consumption

New developments in production and marketing have played a significant part in the changing pattern of citrus production, marketing, and consumption. New production, harvesting, and handling techniques have helped growers provide citrus products to consumers at prices low in comparison with prices for many competing foods. The development and successful merchandising of frozen concentrate juices further helped to make citrus a convenient, attractive, and low-cost food, and encouraged its consumption. The substantial shift to consumption of frozen juices also contributed to a greater concentration of citrus production in Florida. Bulk handling and shipment of fruit to terminal markets offer opportunities for further cost reduction. Fresh and powdered juice distribution is another development encouraging optimism for the citrus industry. During the next 5 years, production and marketing trends will continue to be affected by these developments of the recent past as well as by new production, processing, and marketing methods that may be developed.

VEGETABLES

Total Consumption of Vegetables Will Increase

Per capita consumption of vegetables is likely to remain near its present level during the next 5 years. This projection is made in light of the

already high level of vegetable consumption and recent trends in consumer expenditures. Further increases in income will probably be reflected to a lesser extent in the demand for vegetables than in the prewar period.

The total population is expected to increase from 164,595,000 in 1955 to about 178,000,000 in 1960. Based on this projection there would be approximately 8 percent increase in vegetable consumption from 1955 to 1960.

Since 1951 the per capita consumption of fresh vegetables has remained steady after a decline from a peak after World War II. Per capita consumption of fresh vegetables is likely to change little during the next 5 years.

Demand for Processed Vegetables Is Increasing

Since 1950 per capita consumption of processed vegetables has increased about 2 pounds. The demand for processed vegetables during the next 5 years is expected to continue to increase at a slightly faster rate than population. However, any substantial increase in per capita income will probably not be as fully reflected in the demand for processed vegetables as it was in the prewar and postwar periods.

The demand for canned vegetables as a group is likely to keep pace with population growth. Some items, like peas and spinach, will probably decrease, while other items such as corn and snapbeans are likely to increase.

The consumption of frozen vegetables has increased from about 3 pounds per person in 1947-50 to more than 5 pounds in 1951-54. With the improvements in technology and the trend toward "convenient food preparation," demand for frozen vegetables is expected to increase during the next 5 years.

Even though the total consumption of vegetables during the last 3 or 4 years has been less than in the immediate postwar years, probably the high level of consumption in that period was due in part to conditions created by the war. Therefore, the comparison of the last few years with the immediate prewar period is more meaningful. The per capita disappearance of fresh and processed vegetables (fresh weight equivalent) averaged 206 pounds in the 1952-54 period, 35 pounds more than in 1937-39. Probably the total per capita disappearance of vegetables will maintain the 1952-54 average for the next 5 years.

Production Has Increased Most in the West

Production of vegetables for fresh market increased 30 percent from the years 1940-44 to 1954. The increase in production was more rapid in the areas producing for winter harvest (plus 45 percent) than in areas producing for summer harvest (plus 12 percent). Comparing the years 1940-44 and 1950-54, production increased 11 percent in the North Atlantic States, 4 percent in the North Central States, and 7 percent in the South Central States. During the same period production increased 61 percent in the South Atlantic States and 43 percent in the Western States. In 1955 the regions produced the following proportions of the national annual production of fresh vegetables:

north Atlantic, 12 percent; north central, 9 percent; south Atlantic, 25 percent; south central, 13 percent; and western, 41 percent. An increase in the availability of fresh vegetables during all seasons was accompanied by substantial increases in production in the Southeast and the West--areas shipping long distances to eastern and northern markets.

Production of vegetables for processing has also increased--26 percent from 1940-44 to 1950-54. The rate of increase has been greatest in the Western States, 89 percent. In the North Atlantic States production increased 19 percent and in the North Central States, 9 percent. In the South Atlantic States production declined 20 percent and in the South Central States production declined 30 percent. In 1955 45 percent of the vegetables for processing were produced in the Western States as compared with 25 percent during the years 1940-44.

It seems probable that the production trends of the last decade will continue.

Producers Must Adjust Supply to Demand

While it is true that a given quantity of vegetables will bring better prices if incomes are high, year-to-year changes in available supplies account for most of the year-to-year variation in prices. Prices received by producers for vegetables will depend largely on volume produced and marketed; therefore, producers should be aware of total demand for particular vegetables. The information available through the vegetable acreage guides program and Crop Estimate Division, USDA, is useful for adjusting supplies to demand.

Cabbage

Production is relatively stable.--Annual production for fresh market has changed little in the years 1949-54. Some reduction in spring production has occurred since 1949, but this has had little effect on annual output.

Utilization for sauerkraut has varied from 171,000 to 246,000 tons in recent years. While the long-term trend is up, no definite trend is apparent for the years 1949-55. There have been no significant changes among producing States in the amount of cabbage used for sauerkraut.

Per capita consumption of fresh cabbages has shown a steady decline since 1920 from a high of 27 pounds per person in 1920 to 13.2 pounds in 1954. During the last 5 years, per capita consumption has changed little and is expected to level off at about this level. Increased population will result in somewhat more fresh cabbage being consumed. Sauerkraut consumption will probably follow population trend.

Cantaloup

Production increases in specialized area.--Expansion in cantaloup production is occurring primarily in shipping areas of south Texas, the Yuma

area of Arizona, and the Blythe and San Joaquin Valley areas of California. These areas have the following characteristics in common: (1) a long growing season and a warm, arid climate, (2) availability of extensive land areas that can be irrigated, (3) use of improved varieties, and (4) general use of modern marketing methods. Production is declining in the Salt River valley in Arizona and the Imperial Valley in California, largely owing to economic pressure from competing areas. In other States which produce cantaloups primarily for local markets, production appears to be fairly stable. A few States in the midsummer group have reduced cantaloup production, and a moderate increase in production has occurred in some late summer States. Some local market States are handicapped by production difficulties, including plant diseases, and lack of standardization in sizes and containers.

Per capita consumption has remained fairly steady over the years, ranging from 7.8 pounds to 11 pounds depending on quantity and quality of supplies. The present level of consumption is expected to continue for the next 5 years with total disappearance in line with population growth.

Lettuce

Production increases since 1949, but relatively stable last 4 years.-- Although the annual production of lettuce has increased about 15 percent since 1949, output the past 4 years has been relatively stable. The proportion of the crop grown in the three major States of California, Arizona, and Texas has remained unchanged during this period at about 85 percent. In this group of States, California has increased production about 17 percent since 1949, and Texas has more than tripled production, but Arizona's output has declined. Other States where production has increased significantly are Florida and New Jersey. In Oregon and Idaho, lettuce production has declined. Production in remaining States has shown little change. The development of lettuce varieties more tolerant of warm weather has not brought about a marked increase in lettuce production in North Central and Northeastern States. There is, however, increasing interest in this commodity in these areas.

Per capita consumption for the past 5 years has been relatively stable. Disappearance will probably follow population with a slight upward trend.

Onion

Acreage declines while yield per acre increases; early spring production expands.-- Onion production during the last 7 years has ranged from 38.8 to 49.8 million sacks with no definite trend. However, average annual onion production in 1949-55 was 42.5 million sacks as compared with the 1939-48 average of 38.6 million sacks. Increases during this 17-year period occurred in the early spring, late spring, and late summer season. The expanding production is the result of increasing yields on decreased acreage. There is a tendency for onion culture in all areas to be concentrated on the better lands, and growers are employing improved onion strains and more fertilizer, dusts, and sprays to expand their operations vertically. Since 1949 the

production of early onions in south Texas has increased to the extent that marketings have exceeded 4.2 million sacks in each of the last 4 years. This increase is associated with rising yields resulting from the widespread use of hybrid seed and expansion of irrigated acreage. There has been a tendency for onion production to be concentrated in larger enterprises. Recent developments in production and marketing seem likely to encourage a continuation of this trend.

Per capita consumption has remained stable at about 10 to 12 pounds. Consumption will probably continue to follow population trends.

The introduction of hybrids and other technological advances in production and storage will undoubtedly bring about important changes in areas, acreage, and methods devoted to production in the next 5 years.

Sweet Corn

Production shows spectacular increase in the winter, spring, and fall seasons.--In recent years there has been a spectacular increase in the production of sweet corn for fresh market in the winter, spring, and fall seasons, primarily in Florida and California. By growing hybrids, controlling insects with new insecticides, and refrigerating corn from field to terminal, commercial growers have succeeded in supplying distant markets with good quality fresh sweet corn. For many years production of sweet corn was largely confined to the summer season in local market areas of Northern States. The volume produced during the summer months has shown little change nationally in recent years.

The production of sweet corn for processing increased sharply during the 1940's. Since 1949, it has fluctuated from about 1 million to 1.5 million tons without following a definite trend. Increasing production in Wisconsin, Minnesota, Idaho, and Oregon has counterbalanced a downward trend in Maine, Ohio, Indiana, Iowa, and Maryland. Although use of sweet corn by freezers has increased sharply in recent years, over 80 percent of that processed is used by canners.

Per capita consumption of fresh sweet corn has increased very steadily during the last 35 years from 2.7 pounds in 1920 to 8.3 pounds in 1954. The same is true, but to a lesser degree, for the canned product, from 2.4 pounds in 1920 to 5.2 pounds in 1954. The frozen product has increased greatly with a per capita consumption of 0.04 pounds in 1937 to 0.45 pounds in 1954, but is still a small part in total disappearance.

Per capita consumption will increase in fresh, canned, and frozen forms but probably to a lesser extent than during the last 5 years.

Green Peas

Fresh-market green peas virtually disappear as production for freezing expands sevenfold and production for canning remains steady.--In the last 16 years, the production of peas for fresh use has virtually disappeared as a

commercial enterprise. In 1954 the production of fresh-market peas amounted to only 5 percent of the total annual production on an "as-sold" basis, and 2 percent of the total on an "equivalent shelled" basis. During these 16 years the production for freezing increased about sevenfold. Production for canning expanded during World War II, but has show no pronounced trend in the last 7 years.

Production of peas for freezing increased rather steadily from 17,500 tons in 1939 to a peak of 129,200 tons in 1953. During the last 3 years, the proportion frozen has remained very steady at 28 to 29 percent of the total production for processing.

Production for canning and other processing increased during World War II, reaching a peak of 439,010 tons in 1945. In the last 7 years, it has ranged from 273,150 tons in 1949 to 391,840 tons in 1951, with no marked trend. The national yield per acre for the total crop, although quite variable, has remained quite steady. During the last 7 years, the acreages in Wisconsin, New York, and Pennsylvania have remained relatively stable at levels below their World War II peaks. However, in Washington, Oregon, Idaho, and Minnesota the acreage of this crop has continued to expand in recent years. This uptrend is associated with the expansion in the frozen product. In 1955, these four States accounted for two-thirds of the national total of 125,000 tons for freezing.

During the last 10 years per capita consumption of canned peas has been downward from 7.1 pounds in 1945 to 4.8 in 1954. During this same time per capita consumption of frozen peas has been on an upward trend from 0.62 pounds in 1945 to 1.38 pounds in 1954. These trends are likely to continue for the next 5 years.

Tomatoes

Production for fresh market increasing, but processing production shows no pronounced trend despite upsurge in yield per acre.--Production for fresh market has shown an upward trend during 1949 to 1955. This is the result of increased production in the winter, spring, and fall seasons. The crop for summer harvest has remained relatively stable, despite shifts between producing areas. Production for processing reached an alltime high in 1951 but shows no definite trend for the 7-year period. However, there is a marked upward trend in the yield per acre of the processing crop.

Winter production: Although year-to-year fluctuations have been erratic, production of winter tomatoes in Florida has registered an increase since 1949. Expansion has occurred largely in Dade County, where about 85 percent of the 1954 winter crop was produced. Southern Florida is the only area in the United States where volume supplies of field-grown tomatoes can be matured during January, February, and March.

Processing production: Processing tomato acreage increased rapidly in California during the war. Yield per acre in that State started on a

phenomenal upward trend in 1946. After the war the acreage declined in all other principal producing States except Florida. As a result California now has about 37 percent of the acreage and 61 percent of the production of this crop.

During the last 7 years, the Nation's production of tomatoes for processing has ranged from the alltime high of 4.3 million tons in 1951 to 2.5 million tons in 1949. The acreage has fluctuated considerably during this period, but the general trend has been downward since 1951. Yield per acre has shown a sharp increase, a continuation of the upward trend that started in 1946. Yields have also shown a definite uptrend in Illinois, Indiana, and Ohio, and some tendency in that direction in New York and New Jersey. However, since World War II acreage has declined in all the principal producing States except California and Florida.

Per capita consumption of fresh tomatoes has been stable since 1935--about 13 $\frac{1}{2}$ pounds in the last 5 years. On the other hand, definite increases are evident in use of juices and other processed products with the exception of canned tomatoes. Total consumption of tomatoes in both fresh and processed forms is likely to increase slightly in the next 5 years.

Watermelon

Acreage is increasing.--From 1949 through 1952 total production of watermelons in the United States did not change significantly. Since 1952, however, production has been increasing at a considerable rate. This increase is associated with an uptrend in acreage rather than any significant change in yield. Factors contributing to this uptrend are: (1) the planting of more acreage in Florida, particularly for the early market, (2) the additional acreage available in summer States where acreage reductions have occurred for other crops in control programs. During the past few years new varieties and other techniques have increased efficiency of production.

Per capita consumption has not changed much over the last 20 years and seems unlikely to change during the next 5 years; therefore, total consumption will probably parallel population trends.

Snap Beans

Production for processing now exceeds fresh market production.--Production for fresh market has declined moderately since 1949. This reduction has occurred largely in the spring and summer harvest seasons in the lower yielding States. Production during the winter and fall seasons is relatively stable. Curtailed production appears to be associated with diminishing market demand for fresh snap beans.

Production for processing has increased substantially in recent years owing to expanded requirements of the canning and freezing industries. However, production for processing is declining in Maine, South Carolina, Arkansas, and Oklahoma. While the quantity of frozen snap beans rose sharply

during this period, expansion in canned snap beans accounted for most of the gain. Both acreage and yields of beans for processing have increased since 1949. In Oregon, where average yields are more than three times the national average, acreage has shown an upward trend since 1948 with large increases in 1954 and 1955. Since 1953 production for processing has exceeded production for fresh market.

Per capita consumption of the fresh product has been slightly downward since 1947. This has been more than offset by increases in per capita consumption of canned and frozen beans. The total disappearance is expected to increase during the next 5 years.

Potatoes

Demand for potatoes has declined.--Although there has been an upward trend in per capita income and population in the United States during the past decade, the demand for potatoes has declined. The per capita consumption of potatoes declined from 128 pounds in the 1935-39 period to 100 pounds in the 1951-55 period.

However, this trend seems to have stabilized during the past 5 years, owing mainly to an increased utilization in the processed form.

Important changes have taken place in the utilization of the crop. During the 16-year period, 1939-54, the total quantity of potatoes used or lost on farms where grown has declined in total quantity. As recently as 1940 only 67 percent of the crop was sold by the producers. During the five most recent seasons, sales have averaged close to 84 percent of the crop. The quantity saved for farm household use declined from about 60 million bushels in 1939 to 18.4 million in 1954. The quantity saved for seed to plant on farms where grown also declined drastically from 24.5 million bushels to about 12 million as farmers reduced their acreage and purchased more certified seed. Potatoes fed to livestock on farms where grown or lost through shrinkage and decay have remained at a fairly constant percentage of production, averaging 7 percent for the 5-year period 1950-54, as compared with 8.4 percent for 1939-43.

Important changes also have occurred over the past 12 years in the uses made of potatoes after they leave the growers' hands. While the level of production is about the same as it was 15 years ago, the quantity sold is larger averaging about 307 million bushels in 1950-54 as compared with 262 millions in 1939-43. The larger quantities now sold find their way, to an increasing extent, into new outlets. The largest change has occurred in the quantities processed for human food.

In 1940 only 5.4 million bushels, or 2.1 percent of total sales, were processed for food according to industry estimates. Most of this processed quantity, 83 percent, went into the manufacture of potato chips. The remainder was used in the processing of hash, stews, soups, and potato flour.

By 1954, according to industry figures, the quantity processed for food had increased to 42 million bushels, or 14 percent of the quantity sold. Of this amount, 32 million bushels were used for the manufacture of potato chips, 3.6 million for frozen french-fries and other forms of prepared frozen foods, 3 million for dehydration, and 3.4 million for other uses, such as canning, hash, stews, and soups.

In 1940 processors of food purchased 1 bushel out of every 50 sold by growers, whereas in 1954 they purchased 1 bushel out of every 7 leaving growers' hands. Processors are specific-use purchasers, as potatoes used for potato chips and frozen prepared food should be high in solid matter content, limited to a few varieties, conditioned before using in especially equipped storages in the late States, and should meet certain other quality requirements.

Potatoes sold for nonfood products such as starch and alcohol amount to a sizable volume each year. Since these uses are usually a diversion of surplus production at salvage prices, the volume sold depends on the supply and price. In the last 15 years, the quantity used by processors for starch has ranged from 3.4 million bushels from the 1942 crop (1.4 percent of quantity sold by growers) to over 21.8 million bushels for the 1950 crop (6.1 percent of potatoes sold). Large quantities of potatoes were used for the manufacture of alcohol during the war. In recent years potatoes have not been used for this purpose, and distillers are not now equipped to use potatoes.

Another important nonfood outlet has been livestock feed. In recent years, while no official estimates are available, probably from 5 to 8 percent of the crop has been used in this manner.

Exports of potatoes vary from year to year depending on domestic and foreign supplies and prices. Immediately after World War II exports were high, stimulated by heavy domestic production, a world food shortage, and foreign assistance programs--with peak exports of over 14 million bushels in 1945. Since 1949, 4 to 7 million bushels have been exported each year.

The United States also imports small quantities of potatoes. Imports for consumption for the years 1950-52 averaged 3.6 million bushels per year, while imports of certified seed from Canada averaged 2.8 million bushels per year. In total, exports and imports have been close to equal in recent years.

Potato production is more specialized.--Potato production during the past 20 years has been characterized by a drastic reduction in acreage, a phenomenal increase in yield per acre, and the maintenance of production at a high level. In 1939 about 2.8 million acres were harvested, whereas the 1955 harvested acreage was a little less than 1.5 million acres. During the same period yield per harvested acre rose from about 122 bushels to better than 250 bushels. At the beginning of the 17-year period, production averaged 361 million bushels (1939-42 ranged from 342 to 377 millions). For the following 8 years, 1943-50, when wartime incentives and price supports were stimulating factors, production reached a record of 487 million bushels and averaged 428 millions. During the 4 years 1951-54 production averaged 351 million bushels.

The greatest upsurge in yields per acre followed World War II. From 1946 to 1950 harvested acreage declined from 2,664,000 to 1,696,000 (36 percent) but yield per acre rose from 157 bushels to 253 bushels, an increase of 61 percent. This increase in yield was encouraged by a reduction of low-yielding acreage, the concentration of production on specialized potato farms, and improved cultural practices.

Between 1944 and 1949, the number of farms growing potatoes dropped from 2,065,227 to 1,649,906. In 1949, 82 percent of the crop was produced on 30,789 farms that grew 10 acres or more of potatoes.

A shift of low-yielding acreage and noncommercial acreage out of potato production and into more profitable alternatives resulted in a larger part of the crop being grown on the higher-yielding soils in larger enterprises and in specialized areas. This change occurred both within States and between States.

Better cultural practices, including the wider use of improved potato varieties, certified seed, improved insect and disease control, contributed significantly to the increase in yields. Other adjustments made by farmers, under the influence of price programs, also affected the extent and speed of the increase. The adoption of improved and more efficient handling equipment, including potato diggers, automatic loaders, and bulk handling equipment, also played an important role in bringing about these changes.

Since 1951 yield per acre has remained fairly stable. Production trends have been somewhat different among the regions. In the seven intermediate States, the crop declined from 8 percent to 4 percent of the total United States production from 1939 to 1955. In the 13 early States, production increased slightly from 14 percent to about 16 percent of the total crop. In the 29 late States, also, a slight increase was registered, production rising from 78 percent to about 80 percent of the United States total. Perhaps of more significance are the regional shifts within the late group of States. A significant decline is shown for the 9 Central States, which now produce less than 20 percent of the national crop as compared with 28 percent in 1939. The 9 Eastern States have held their own at approximately 30 percent of the crop. The 11 Western States have shown a pronounced upward trend and now produce 32 percent of the national crop as compared with 23 percent in 1939. It should be pointed out that the rapid population increase in the Pacific Coast States has also helped encourage this trend in the West.

Marketing has changed to better satisfy consumer demand.--Some rather significant changes in marketing potatoes have come about since World War II. For example, the trend toward self-service, supermarkets, and one-stop food marketing has accelerated the trend toward packaging potatoes in consumer units of 5, 10, and 15 pounds. Research has pointed out that when potatoes are washed and sold in packages that allow the consumer to see what she is buying, potatoes are in a favorable position to compete for the consumer food dollar.

A number of research studies have revealed the desirability of separating potatoes by specific gravity for special uses. Potato chip manufacturers and other food processors recognize the need for quality control programs which indicate or measure the total dry matter of potatoes.

Another important marketing development since World War II is the trend toward more convenience in home preparation of food. With almost 20 million women working full time outside the home and many more with jobs on a part-time basis, it appears that the American homemaker will demand these added conveniences even more in the future. This trend has affected the increased use of processed potatoes already mentioned.

Another new development in marketing is the prepeeled-potato service rendered restaurants, hotels, hospitals, and other public institutions. In 1946 the prepeeled-potato industry was practically unheard of. According to a USDA survey made recently some 3 $\frac{1}{4}$ million bushels of potatoes were prepeeled out of a 65-million-bushel potential. With the trend in the demand for more services of this type, it is reasonable to expect this service will increase considerably in the near future.

Outlook for potato industry is good.--The per capita consumption of processed potato products, such as potato chips, frozen french-fries, patties, potato granules (instant mashed potatoes), and the like, will continue to increase during the next 5 years. Continued progress in developing new products and improving old products and processes will contribute to this expansion.

The trend toward more services added to the fresh product such as prepeeled, cut-up french-fries and par-fries is expected to continue and possibly increase as technology improves.

More and better services in the retail sales of fresh potatoes, such as washing, packaging, more effective advertising and merchandising in the store, and better quality (internal as well as external), will be required to minimize the decline in per capita consumption of potatoes purchased in this form.

In the aggregate it is estimated that the per capita consumption will remain relatively stable around 103 pounds during the next 5 years.

If satisfactory prices are to be received by growers, however, they must adjust their year-to-year production to demand.

Sweetpotatoes

Demand for sweetpotatoes has declined.--Since 1946, consumption of sweetpotatoes has declined, both on a per capita basis and in the aggregate. In 1946 almost 61 million bushels of sweetpotatoes were produced as compared with 30 million bushels in 1954 and 38 million bushels in 1955. The acreage of sweetpotatoes has been declining during the past quarter century. During the early 1930's the acreage of sweetpotatoes was at the highest level

of record. The smallest acreage of record of commercial sweetpotatoes was planted during the prosperous years 1951-54. The acreage declined from 857,000 in 1943 to a low of 314,000 in 1951 from which there has been a small increase.

Sweetpotato production is decreasing in both noncommercial States and commercial areas.--Since 1939 acreage has declined drastically in the non-commercial States and moderately in most commercial States with the exception of New Jersey, Louisiana, and California. New Jersey acreage has increased moderately; Louisiana and California have about the same as in 1939. The number of farms growing sweetpotatoes in the United States dropped from 1,163,719 in 1939 to 785,983 in 1949, with decreases in each sweetpotato State. As evidence of the present commercialized production, in 1949 the census reported about 75 percent of production grown on 15 percent of the farms--those farms having 1 acre or more of sweetpotatoes. Also, sales have increased from 40 percent of the crop in 1939 to 57 percent in 1954.

The average yield per acre for the 5-year period, 1950-54, of 93 bushels is only slightly higher than the 1939-43 average of 86 bushels.

Decline in commercial acreages encouraged by high labor requirements and lack of storage facilities.--The decline in commercial acreage has probably been partly due to high labor requirements and the expense of providing satisfactory storage. It has also been encouraged by average prices that have made sweetpotatoes an unattractive alternative on many farms.

High industrial employment and greater prosperity in the Southern States, with declining emphasis on production of sweetpotatoes for home use, probably also contribute to this decline in production. High incomes of recent years may have contributed to increased consumption of other foods both in sweetpotato-producing areas and in other parts of the country.

Compared with the sweetpotato industry, producers of competing foods have been able to make greater progress in improving labor efficiency, harvesting and handling practices, processing techniques, and the average level of quality of product offered to consumers. Likewise, producers of competing foods have progressed more rapidly in merchandising to provide a product convenient for the housewife to procure and serve to her family.

Occasional high prices have encouraged temporary increases in production. Satisfactory sweetpotato prices depend to a considerable extent on the ability of growers to keep production in line with market demands. For example, in 1950 production rose 11 percent above the previous year, while the average price dropped 23 percent. By contrast, production in 1951 dropped 42 percent and the average price increased 85 percent. Production in 1955, largest since 1950, is likewise having a depressing influence on prices received by growers.

Outlook for sweetpotato industry.--If the sweetpotato industry could reduce labor requirements and costs by mechanizing harvesting and handling and provide consumers, at low cost, the qualities of product and services they

desire, it seems likely that per capita consumption of sweetpotatoes could be stabilized. However, it seems unlikely that progress in this direction in the next few years will be sufficient to reverse the downward trend in consumption.

Dry Beans

Before World War II demand for beans increased.--During the 20 years preceding World War II there was a considerable increase in the total demand for dry edible beans, caused by increasing population and consumption rates. Production in the United States rose from 7.3 million 100-pound bags (cleaned) annually in the period 1920-24 to 13.6 million bags in 1935-39. All of the increased production during this period went into the domestic market, with per capita consumption rising from less than 6 pounds per capita in the early 1920's to almost 8 3/4 pounds in the late 1930's. Exports actually declined from about one-half million bags in 1920-24 to less than 300,000 bags in 1935-39.

Domestic consumption is stabilized.--Prices received by farmers were relatively high during the war and in the immediate postwar years, and production and exports increased significantly, exports reaching a wartime peak of 4.5 million bags. Then prices declined in 1947 and 1948, reflecting the larger crops and reduced export demand. Since 1949 production has been somewhat lower and with the aid of supports, prices received by farmers have usually been more favorable. In the past 15 years per capita consumption has shown rather slight variations from year to year with no evidence of any trend. It appears that the rate of domestic disappearance may have stabilized at around 8 pounds per capita. During the next few years the quantity of beans taken by the export trade will probably depend somewhat on the United States production and type of export program. Assuming that the Government will continue to be a factor in the domestic and export market, production during the next 5 years is expected to about keep pace with the increasing population, and exports may average around 2 million bags annually.

Increased production is due largely to higher yields.--Over the years there has been a shift in the major areas of production. The Rocky Mountain area has been steadily increasing in relative importance at the expense of the Eastern area. This shift has been due largely to the much more rapid increase in average yields in the Mountain States as the relative changes in acreages have been minor. Despite an almost doubling of United States production from 1920-24 to 1950-54, acreage planted to beans increased only about 30 percent, whereas yields increased more than 80 percent. In the earlier years, yields were often determined as much by the extension of acreage to marginal areas as by weather for that particular year. Consequently, prior to 1930, yields generally declined as acreage rose. Then yields rose rather sharply in the mid-1930's, remained relatively stable in the period 1937-46, and in more recent years have again tended to increase. Principal factors contributing to increased yields have been development of better varieties, improved cultural practices, and the expansion of irrigated acreage. Looking into the next 3 to 5 years, increasing yields may about keep pace with increasing population, so there will probably be no significant

increase in overall acreage from the 1.7 million acres planted in 1955. However, irrigated acreage is likely to continue to expand in relatively new areas, such as Washington, and in some of the older areas. But such expansion is likely to be largely offset by abandonment of marginal land in nonirrigated areas.

Domestic consumption rates are unlikely to increase greatly.--Greatly increased attention to consumer packaging, an inevitable adjustment to the merchandising requirements of the modern, self-service supermarket, has contributed significantly to the expansion of the market for dry edible beans. Data available show that over the years there has been a change in the character of demand by regions. Traditionally the Northeast has been the largest market for white beans and the Southeast for colored varieties, but in recent years this pattern of preference has become less marked. Lima beans, produced in California, are sold throughout the United States. Such a pattern of national distribution and acceptance may eventually be attained by some of the other classes. Increased geographic availability of and familiarity with a greater number of classes and the merits of each for special uses is apt to promote somewhat greater consumption of beans than there would otherwise be. But with many other foods also competing for a larger share of the market, and with the trend toward declining consumption of most starchy-type foods, per capita consumption of dry edible beans is not expected to increase much if any during the next few years.

Dry Peas

On a national basis dry field peas are not nearly so important as many other field crops. In 1955 plantings amounted to about 309,000 acres, about four-fifths of which was in two States--Washington and Idaho. In the immediate prewar period annual plantings amounted to only about 1/4 million acres. Then under the stimulus of heavy wartime demand, plantings expanded rapidly to more than 3/4 million acres in 1943, with most of the increased production going into the export market. Exports increased from less than 1/4 million 100-pound bags in the immediate prewar period to about 7 million bags in 1944.

The postwar readjustments in exports and production were substantially accomplished by 1950. In the 1950-54 period, production averaged about 3 million 100-pound bags, 30 percent higher than in the 1935-39 period. In most recent years domestic food use has averaged 1/2 to 2/3 pounds per person, or a total of 800,000 to 1 million bags per year. Nonfood use--seed, feed, and loss--has averaged about 1 1/2 million bags. During the same period exports have generally amounted to about 1/2 million bags, except in 1954 when export demand was very strong owing to a virtual failure of the pea crop in Europe. There seems to be no basis for expecting any appreciable expansion in our foreign market for dry peas during the next few years. Since domestic demand is expected to about keep pace with population growth, prospects point to a small increase in dry pea production during the next few years.

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Program Projection Report No. 5g

Forestry

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DISTRIBUTION: To State and assistant State extension directors;
State and assistant State leaders and district agents in agricul-
tural, home demonstration, and 4-H Club work; extension editors;
and subject-matter specialists and economists concerned.

Forestry

Past Trends

Within the last few months the Forest Service has released the Timber Resource Review, an up-to-date comprehensive review of the Nation's timber resources, which required over 3 years of planning and field survey.

The review indicates that the Nation's best cared for timberland is owned by the Government and industry. Industry owns 13 percent of the Nation's commercial forest land, and the Government 27 percent. The other 60 percent is held by some 4.5 million small private owners.

The 4.5 million small private owners include some 3.4 million farmers, this farm group owning one-third of our commercial forest lands. For the country as a whole, only about 40 percent of the farm and 50 percent of the "other" private owners qualified their recently cut lands in the upper productivity class.

Thus, the farm and "other" private owners have the poorest cutover conditions, the largest in total area, largest in numbers, and potentially the largest in total timber volumes.

Unquestionably the heart of the forest problem of the United States lies with these 4.5 million owners. Extension should be concerned especially with the 3.4 million farm owners and also the miscellaneous group of 1.1 million "other" private owners. Although these private owners usually possess very small tracts of forest and their principal interests are normally not timber growing, they control, in the aggregate, 60 percent of the Nation's commercial timberland. They must, therefore, continue to supply a substantial portion of the raw materials for the forest industry.

Although the per capita consumption of lumber has dropped from 539 board feet at the turn of the century to 248 today, population increases have taken up the slack so that our total national needs have not decreased. This per capita reduction is due chiefly to substitution of other materials. Construction has been the most important end use of lumber, accounting for three-fourths of the total. Use of lumber in fabricated products and shipping has been reduced as a result of competition from paper and board, plywood, glass, metals and other materials.

The Future Demand for Forest Products

In determining long-term trends for forest products, which require years to grow to merchantable sizes, it is necessary to base such predictions on assumptions as to future conditions. The Forest Service in its study of the timber resources has used two sets of assumptions for arriving at lower-level and higher-level estimates in charting a long-range

potential demand for forest products. The lower-level estimate, used in the following table, assumes continuation of current substitution trends, a substantial increase in the price of lumber relative to the price increase of competing materials, and a decrease in the per capita consumption of lumber.

Table 1.--Consumption of timber products in 1952 and estimated demand for 1975 1/

<u>Units</u>		<u>Consumption, 1952</u>	<u>Lower level</u>	<u>Demand, 1975</u> <u>Percentage increase</u>
New Lumber	- billions of bd. ft.	41.5	46.0	11.0
Pulpwood	- millions of cords	35.4	56.0	58.0
Veneer logs	- billions of bd. ft.	2.5	4.5	80.0
Minor products	- billions of cu. ft.	0.7	0.7	0.
All industrial				
wood	- billions of cu. ft.	10.2	12.8	25.0
Fuelwood	- millions of cords	58.6	40.0	-32.0
Total forest				
products	- billions of cu. ft.	12.2	14.3	17.7

1/ Figures taken from The Timber Resource Review, September 1955.

These lower-level estimates show that the 1975 potential demand for lumber in the United States may amount to 46 billion board feet which is 11 percent above 1952 and 12 percent above the 1955 level of consumption. This estimated increase in potential demand is considerably below the expected increase in population and gross national product. It is assumed that an increase in the price value of lumber and industrial wood products will be reflected in the stumpage price of sawtimber and other products. However, the stumpage price increase in pulpwood would probably be moderate owing to the use of smaller and lower-quality timber, and the greater use of mill residue and hardwoods.

The upper-level estimates for 1975 are not given by products. However, for all industrial wood consumption as estimated for 1975 there would be a higher level increase of 40 percent compared with 25 percent for the lower level. This higher-level estimate assumes that there will be a continuation of the 1952 quantity use of wood with no appreciable increase in price, that wood will hold its 1952 competitive position against other material, and that there will be a slight increase in per capita consumption of industrial wood. It is fully appreciated that the actual course the potential demand in 1975 will take will depend on the nature of changes in the economic situation, including competitive factors, the price structure, and progress in the production of forest products.

Per Capita Consumption Estimates for 1975

As indicated above, the lower-level estimated potential demands for timber products are substantially above 1952 consumption. However, they actually imply that timber products will be used much more sparingly in the future than in the past. The estimated consumption increase for 1975 is less percentage wise than the expected increase in the Nation's population which would mean there will be a decline in per capita average consumption of timber products.

The changes in the percentage of per capita average consumption for 1975 would be as follows:

Per capita consumption and percentage change from 1952

	<u>1975</u> Percentage change
All timber products	-12.8
Industrial wood	- 6.6
Lumber	-17.1
Pulpwood	+17.4
Veneer logs	+36.4
Minor products	-23.8
Fuelwood	-48.6

Anticipated Net Imports

The United States, for some years, has been the world's largest importer of timber products. It is to be expected that importations will continue but in a lesser degree. The 1952 net imports of softwood lumber were 1,752 million board feet and the anticipated net imports for 1975 are 1,000 million board feet.

The 1952 net imports of pulpwood and its equivalent were 11.2 million cords and the 1975 estimate is 14 million cords, or a 25-percent anticipated increase of net imports over 1952. Most of this would be in the form of pulpwood and finished paper— chiefly newsprint. Canada has the largest supply of species most suitable for newsprint, and it is most likely that the expanding United States demand will be met chiefly from that source for some time to come.

Production Problems as Related to Demand

There is a favorable forest products demand situation now and it is believed that this condition will extend much beyond the 10-year projection period and even to the turn of the century. This situation will be caused by a high-level annual cut of forest products with no burdensome surpluses and a growing potential demand as pointed out previously.

The darker side of the picture is in the production field where greatly accelerated action will be necessary if the growing of timber products is to keep pace with demand. The facts dealing with the forest management or production are discussed in the forest conservation statement appearing in the Conservation section. In order to view the entire situation with a better perspective, it would be well to mention briefly such major problems as 115 million acres of commercial forest land which are partially stocked or nonstocked, 50 million acres needing plantings and increasing yearly by the diversion of cropland, and the poor condition of two-thirds of the recently cutover lands owned by farmers and other small private holders which were so heavily cut that they can not meet reasonable productivity standards. The problems of rebuilding the forest resources on these lands and increasing average yields generally to a more satisfactory level are of the first magnitude. They should receive careful consideration in projection plans.

Technology and Marketing

The next 10-year period may develop greater changes in technology, mechanization, marketing practices, and consumption pattern than we have seen in the past decade. It can also be expected that rapid advances will be made in the utilization of forest products, particularly hardwoods. Some of the factors which may have considerable significance to consumers, processors, and timber growers in the years ahead follow.

Consumers: The pattern of consumption is likely to continue in the direction of--

1. Increased use of wood substitutes.
2. Shifts from lumber to plywood and building board.
3. Greater use of paper and paperboard products and the development of new paper goods.
4. Increased use of preservatively treated fence posts, lumber, millwork, and timber.

Processors:

1. Use of heavy harvester type equipment for logging, barking, and chipping pulpwood in the woods.
2. Grading of logs and other forest products.
3. Improvement of utilization and milling practices of small sawmills and other small processing plants.

4. Closer utilization of logging residues.
5. An expanded charcoal industry providing greater outlets for thinnings, tops, limbs, and low-quality trees.
6. Larger use of so-called weed species and greater volumes of hardwood in pulp and paper making.

Timber growers:

1. Spot price information on forest products which should be as readily available as that for agricultural products.
2. Greater use of market directories containing specifications of products and information on marketing practices.
3. Information on the margin of profit in growing different timber products.
4. Cost data on farm logging as compared with contract or custom logging.
5. Greater stress on improved quality of wood by growing better species and better quality trees for specific markets.
6. Use of light equipment for faster and more economical cultural practices and harvesting operations.
7. Better markets for thinnings and other intermediate cuttings.
8. Establishment of better marketing procedures for farm forest products.
9. More attention to integrated logging practices to cut timber into products of highest quality and value.

Technological developments making possible a higher diversified utilization of the forest crop by chemical and mechanical means is not only leading to the development of a new consumer goods but is encouraging more intensive management of the forest.

Committee

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U. S. Department of Agriculture
Federal Extension Service

April 1956

Program Projection Report No. 6

USE AND CONSERVATION OF NATURAL RESOURCES

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Summary

Ninety percent of the 1,904 million acres of land in the United States is used for agricultural purposes. Cropland continues to increase at the rate of about $1\frac{1}{4}$ million acres per year. Pasture and grazing acreage is expected to decrease slightly, but the increased carrying capacity will more than offset the loss. Irrigated land is expected to increase 35 percent more in the next 25 years.

Forces now at work should reduce the present rate of soil destruction, and with even present fertility practices the soils will continue to show less acidity and increase in available phosphate and potash. Nitrogen and organic matter will probably continue to show further decline.

About one-fourth of our total population is already up against an actual water shortage, or poor quality water, or both. By 1975 our needs for water will be nearly double what they are now. It is estimated that industrial demand will use 80 percent of the increase.

While industrial and public forests have made notable advances in recent years, most of the farm woodland and other private holdings remain neglected. The potential demands for forest products appear greater than the production of replacements. If the problem is attacked vigorously, it is possible within the next decade to change the general forest outlook.

The fish and wildlife segment of agriculture is often overlooked, but there are signs of increased interest in this field.

More people with more money to spend and more time to spend it have increased the need for areas set aside for recreation faster than they have been provided.

The continued improvement in intermediate term credit should bolster the use of improved practices that will assist in the conservation of natural resources.

Legislation has appropriated large sums of money for conservation and use of natural resources. Nearly \$475 million were available during 1956 in the Department of Agriculture alone. The Cooperative Extension Service has a challenge in seeing that the people in the States are adequately informed about laws and regulations with which they are concerned.

Land

SITUATION

We have 1,904 million acres of land in the United States. In 1950 it was used this way: (25)

	<u>Million acres</u>	<u>Percent</u>
Crops	478	25.
Pasture and grazing	631	33.
Woodland and forest	606	32.
Cities and parks, highways, military reservations, etc.	78	4.
Farmsteads, feed lots, farm roads, highways, etc.	27	1.5
Wasteland, deserts, rough mountains, swamps	84	4.5

Land Used For Crop Production

Our cropland provides us with about three-fourths of our crop and livestock production. The remainder comes largely from pasture and grazing lands. Recently, forestry resources have been increasing in importance as a source of raw material for synthetic fibers.

The acreage of cropland used for crops expanded rapidly upward until about 1920. Since then it has fluctuated between 460 and 481 million acres. This longtime tendency of our cropland acreage to stay about the same is one of the most dramatic features of our agricultural development. It is due, of course, to several factors: the release of land due to the replacement of horses and mules by tractors, the improvement of yields through the increased use of fertilizer, the use of hybrid seed, and other modern technology.

Geographically, more than half our cropland is concentrated in the 12 Central States. During the past 10 years most of the net increase in cropland used for crops has occurred in the Northern Great Plains in western Texas and in the Mountain and Pacific States. In recent years much permanent grass land in the dry area was plowed up due to favorable wheat prices and good weather. Also, in the 17 Western States, Arkansas, Louisiana, and Texas, an estimated 400,000 acres of new cropland per year were developed through irrigation.

The acreage of cropland used for crops in the eastern United States has declined for a good many years, but recently this has changed to some increase.

About one-seventh of our total cropland is used for part-time pasture. Two-thirds of this is in the 31 Eastern States.

Land Used For Pasture And Grazing

In 1950, 60 percent of the total land area of the United States, or about 1,020 million acres, was used for pasture and grazing. Part of this area served a dual purpose by serving as a forest as well as a pasture.

Only about 200 million acres have been improved, including cropland used for pasture. As for open pasture and grazing land, much of this is located in the Western States, but the improved part of this pasture is concentrated in the North Central and Northeastern States. In production of pasture feed, nearly 90 percent of the pasture feed supply is produced on pasture in farms. One-third of the pasture feed is furnished by rotation or cropland pasture; open permanent pasture in farms supplies 40 percent; woodland in farms furnished 7.5 percent and aftermath furnishes 8 percent.

The total acreage in pasture and grazing land has declined about 100 million acres in the past 50 years. Most of this drop occurred in the 17 Western States where large acreages of grassland were plowed up for wheat and irrigated crops. The acreage of woodland pasture in farms and the woodland grazed outside of farm boundaries has also fallen in recent years. The sharp reduction in rangeland grazed was partially offset by increases in acreage of improved pasture on farms.

Acres Used For Grazing (millions)

<u>Year</u>	<u>1910</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>
Rangeland	600	502	437	382	290
Farm Pasture	<u>382</u>	<u>405</u>	<u>464</u>	<u>561</u>	<u>620</u>
Total	982	907	901	943	910

Potential Availability Of Cropland

From present cropland.-- Land-capability estimates show that about 388 million acres of the 1950 cropland are classes I, II, and III land which are suited to regular cultivation with appropriate farming practices. About 49 million acres are class IV land and have limited possibilities for cultivation. About 40 million acres of classes V - VIII land, or about 9 percent of the total 1950 cropland acreage, are not suited to cultivation. Thus, about 81 percent of our cropland is adapted to full-time cultivation; about 10 percent can be cultivated to a limited extent if suitable precautions are taken, and about 9 percent now in cultivation should be taken out.

From grassland and woodland.--According to land-capability estimates some 215 million acres or more, now in pasture, range, and woodland, are physically capable of being improved and planted to diverted cultivated crops with limited intensity. Of these more than 110 million acres are open grassland pasture and grazing land, most of which is in farms. An

additional 105 million acres of potential cropland are now in woodland, about half of which is in farms. Most of the remainder is privately owned. Much of it was once in farms but has been allowed to revert to woodland.

As a net result, it appears potentially feasible to increase the cropland of the United States 175 million acres without resorting to unwise land use.

PRESENT TRENDS IN LAND DEVELOPMENT

By Drainage

Artificial drainage has been provided for nearly 100 million acres of land in organized drainage enterprises in humid areas of the United States; almost all in the Midwest and South. Approximately 38 million acres in organized drainage enterprises were improved and put into cultivation from 1920 to 1950. From 1940 to 1950 the rate of improvement through drainage averaged one million acres each year. About half of this drainage benefitted existing cropland and about half, new land.

By Irrigation

In 1950 the area under irrigation was 25.8 million acres. Nearly 95 percent (24.3 million acres) was in the 17 Western States. Of Eastern States, Arkansas and Louisiana led, due to the use of irrigation in rice farming.

From 1920 to 1950 irrigation increased by an average of about 375,000 acres a year. From 1940 to 1950 more new acreage was brought under irrigation than in any other decade. The average increase per year was about 790,000 acres. About 400,000 acres of this was development of new cropland.

By Clearing

Clearing of woodland (exclusive of that done in combination with drainage and irrigation) is estimated for the 10 years, 1944 through 1953, at 600,000 a year.

By Plowing Up Grassland Sod

An average of approximately one million acres of grassland sod has been added to the cropland for each of the last 10 years.

The combined forces of additional drainage, irrigation, clearing and plowing up of grassland sod has, on the average, converted about 2.5 million acres from other uses to cropland. At the same time, land once used for crops was diverted by soil erosion, encroachment of cities, highways, airports, and other non-agricultural uses to non-cropland. We should recognize, however, that use of cropland for urban development, highways, and other uses is having a serious repercussion in some

of the farming areas. Altogether, these losses amounted to about $1\frac{1}{4}$ million acres per year, the net annual gain of cropland then stands at about $1\frac{1}{4}$ million acres.

FUTURE PROSPECTS FOR DEVELOPMENT OF CROPLAND--TO 1975

If private and public activities in the development of land go forward at about the same rate as they have since 1945, it looks as though about 30 million acres of new cropland will be added to the acreage in cultivation by 1975.

The net acreage of new cropland developed by 1975 would be made up of six million acres of undeveloped raw land to be irrigated, largely from projects now under construction or authorized; 14 to 15 million acres of undeveloped land likely to be developed by a combination of drainage, flood control, and clearing; and 10 million acres of permanent pasture broken up. (These estimates take into account prospective shifts of cropland to woodland, grassland, and other uses as for urban, industrial, highway, and other non-agricultural purposes.)

Thus, on the basis of such estimates a total cropland area of 508 million acres is indicated by 1975.

Here is a rough distribution of the new cropland development of 30 million acres, over a period of 20 years: (26)

<u>Region</u>	<u>Million acres</u>
Pacific	3.3
Mountain	5.0
Northern Great Plains	2.2
Southern Great Plains	4.5
Southern	8.1
North Central	5.9
Northeast	1.0

Besides a net addition to total cropland as acreage, it is estimated that the equivalent of about another 14 million acres of new cropland can be added in these ways: through supplemental improvement of 42 million acres existing cropland, through providing water for irrigation of dry cropland, by providing additional water for irrigated land now receiving inadequate supplies, by draining wet fields, and by protecting fertile bottom lands from floods.

Thus by 1975, counting both new development and supplemental improvement, the equivalent of 45 million more acres of additional cropland could be available.

FUTURE PROSPECTS FOR DEVELOPMENT OF PASTURE AND GRAZING LAND--TO 1975

If the above projected shifts in acreages of cropland and other uses materialize by 1975, it is expected there will be approximately 925

million acres of pasture and grazing --25 million less than in 1950 -- due to shifts of pasture to cropland and other changes.

As a part of this picture the acreage of woodland pasture probably will decline as more land is cleared and as woodland grazing is reduced somewhat as approved forestry practices are adopted.

However, looking at the pasture situation as a whole, it is important to note that there will probably be some increase in acreage in rotation pasture as a part of the cropland picture. Also, more than offsetting the possible decrease in acreages of pasture and grazing land will be the annual improvement of 4 to 5 million acres by reseeding and other measures designed to increase yields per acre. From 1935 to 1954 it is estimated that more than 100 million acres of pasture have been improved.

It is expected that the acreage of range available for grazing will continue to decline, but at a slower rate, and that the use of farm pastures will increase at the present or even faster rate. Improvement in carrying capacity of range land in some areas should accompany the expected wider adoption of range improvement practices, such as eradication of brush and obnoxious weeds, controlled grazing, reseeding with improved grasses and erosion control. It is also anticipated the soil and water-holding capacity will improve on a higher percent of the total acreage.

FUTURE PROSPECTS FOR IRRIGATION AND DRAINAGE AS FACTORS IN THE FUTURE DEVELOPMENT OF BOTH CROPLAND AND PASTURE LAND--TO 1975

Irrigation

The Bureau of Reclamation estimates that there is enough water available to irrigate an additional 17 million acres of western land with an adequate supply and to provide 8.4 million acres of presently irrigated land with more water. However, in view of the general trend in irrigation from 1929 to 1954, it is estimated that irrigated land in the 17 Western States may increase by approximately one-third from 1950 to 1975. This would add 5.6 million acres to the previous 19.8 acres of irrigated cropland and 2.2 million acres to the previous 4 million acres of irrigated pasture land.

For the 31 Eastern States it is estimated that cropland and pasture irrigation will more than double from 1950 to 1975--that is, increase from a total of 1.3 to 3.3 million acres by 1975.

Drainage

Figures on future drainage development are not as definite as those on irrigation. However, in 1950 there were 20 million acres of potentially drainable undeveloped land, mainly in the humid eastern part of the United States. There were also some 30 million acres of crop and pasture land in need of supplemental drainage. Improvement of land by drainage

takes place both outside and inside organized drainage districts. These covered more than 102 million acres in 1950. If drainage development continues at recent rates, it is estimated that by 1975 as much as 125 million acres may be in organized drainage enterprises. These would be significant factors in the development of new cropland.

Soil

CONSERVATION

Farmers as a whole are becoming more conscious of the need and reasons for better land care through the unified efforts of many influences directing attention to the importance of proper soil management in a prosperous and sustaining system of agriculture. This consciousness and the decided move toward better land use and conservation are shown by these facts: *

1. Ninety percent of all farms are now within the boundaries of the 2,626 soil conservation districts established in all States and territories.

2. More than $1\frac{1}{2}$ million farmers have signed cooperative agreements with soil conservation districts covering about 45 percent of the current farm land. It is estimated that these numbers will increase to about 2 million district cooperators and 60 percent of the farm land by 1960.

3. Under such agreements, slightly more than 1 million farmers and ranchers are planning and carrying out these programs of soil and water conservation. Already these farmers and ranchers are farming 33 million acres on the contour, practicing stubble mulching on 30 million acres, using cover crops on 21 million acres, and have planted 2.6 million acres of farm land with nearly 19,000 miles of windbreaks and are carrying out wildlife improvement on $3\frac{1}{2}$ million acres. These are but a few of the many practices and are used only as illustrations. Many other farmers outside formally organized districts are carrying out conservation programs. It is estimated that the number of farmers operating such programs under signed agreements will increase to about 1,500,000 by 1960.

4. Millions of farmers have improved the management of their soil and water resources under the public cost-sharing agricultural conservation program. From 1936 when the program began through 1954, more than 34 million acres were drained, more than 1.3 million dams and reservoirs constructed, vegetative cover established on 394 million acres, nearly 5 million acres of strip-cropping on the contour established, as well as nearly 102 million tons of lime applied. **

* Unpublished data prepared for the report by Soil Conservation Service.

** Unpublished data supplied for the report by Agricultural Conservation Program Service

These are just a few illustrations of the many measures carried out under the program.

5. The National Cooperative Soil Survey is now underway in all 48 States, Alaska, Hawaii, and Puerto Rico. All States have been carrying on soil classification work for many years. These surveys are useful in making land classifications and in determining proper land use and soil management.

6. Wind erosion has more than once created an emergency situation in large areas of the West, especially the Plains States. Among the measures for controlling such erosion, windbarrier tree plantings properly planned and cared for have proved quite effective in the Northern Great Plains. It was estimated as of January 1, 1953, that nearly 3 million acres, of which nearly 80 percent was in the Plains States, still needed windbarrier plantings to control wind erosion. (26) Such plantings were made on nearly 32,000 acres in fiscal 1954; more than two-thirds of these were in the Plains States of Nebraska and the two Dakotas. The establishment and maintenance of sufficient acreage of protective vegetative covers in the Southern Great Plains will probably continue to lag behind the need. This will result in further loss of top soil in that area. Eight Federal programs, cooperating with State and local programs, are promoting this work, but only the better farmers are sufficiently aware of the hidden profits of field shelter belts to endure the costs. (7)

7. Upstream planning and treatment with all measures needed to conserve soil and water to reduce flood and sediment damage have been underway since 1947 in 11 watersheds covering about 30 million acres. Fifty-eight pilot watershed projects have been started since 1953 covering over 3 million acres.

8. Under the 1954 Watershed Protection and Flood Prevention Acts, 452 project applications from 44 States had been submitted as of March 12, 1956. These projects range in area from 3,200 acres to 250,000. Of the applications submitted, 142 from 42 States had been approved by the Department of Agriculture and work plans were being developed. Thirteen of these projects were in the Budget Bureau awaiting early submission to Congress. It is estimated that a total of 70 projects will be submitted to this session of Congress.

Fertility Trends

The use of lime, residue, commercial fertilizers, manure and the production of inoculated leguminous crops have been effective in improving the general productivity of most soils in the humid regions.

In 1950 it was estimated the farms of the United States as a whole were replacing about 50 percent of the nitrogen removed by non-leguminous crops. The return of potash and phosphate is equal to 67 percent and 140 percent respectively of the removal by all crops. Manure accounts for about one-half of the nitrogen and potash and one-third of the phosphate replaced. (5)

In the New England, Middle and South Atlantic States, California, Michigan, and Wisconsin, nitrogen returned exceeds the removal by principal non-leguminous crops. The increase in use of nitrogen in the Central States in the last five years will bring these returns nearly equal to crop removal.

Phosphate applications have as a rule more than offset removal. In New Jersey, Connecticut, Rhode Island, Maine, and the Southeastern States, the return of P_2O_5 has been from 4 to more than 10 times the removal.

While the removal of potash is highest in the Eastern States, the return in those States has also been highest. In the States east of the Mississippi River, all but 10 were replacing the potash removed by crops. They were Vermont, New Hampshire, New York, Virginia, West Virginia, Kentucky, Tennessee, Mississippi, Illinois, and Michigan. In the other Eastern States the return has been at least 10 percent in excess of removal to more than 3.5 times as much in Florida.

It has been estimated that 78 million tons of liming material are needed annually to maintain soil fertility and produce maximum crop yield. (24) The amount used is less than one-third of estimated needs. This has raised a question in some States as to whether the estimated 78 million might be too high as a maintenance. In the six New England States the estimate showed a need of 1,619,000 tons annually, but only 314,000 tons were applied. Soil tests in these same States show the land is becoming less acid and contains a larger amount of exchangeable calcium and magnesium.

Other States are finding a small percentage of their soils showing the need for limestone. If this continues, the estimated annual need of 78 million tons of limestone may be considerably more than enough for maintenance needs.

The extensive study on soil fertility in the New England States indicated there had been an accumulation of all plant foods in cultivated land of that area except for organic matter and nitrogen. (8)

Water

The per capita use of water in the United States has quadrupled since 1900 mostly because of industrial and agricultural demands. The greatest single use of water is for irrigation. This is about one-half of the fresh water we use annually. Industry and steam power plants rank second, and domestic consumption third. The present fresh water demand on our surface and ground-water is estimated by the Geological Survey to be about 63,000 billion gallons a day.

About one-quarter of our total population is up against actual water shortages, or poor quality water, or both, according to a current estimate. (23)

Our average national annual rainfall is 30 inches, but the distribution pattern is poor. The 17 Western States with 60 percent of the land area, 94 percent of the irrigated land, and 23 percent of the population, get only one-fourth of the total precipitation. Long dry spells in our humid areas, with below-normal precipitation for several years in a row, have made the western consciousness of water a national consciousness. As a nation we are becoming ever more aware that we can no longer waste water than we can any of our other natural resources.

Problems of water use and conservation are many and complex. With the growing use of irrigation in humid areas we need further study of weather records. In Mississippi, for example, a 40-year weather record indicated the need of irrigation every year but one, although the average rainfall is 50 inches.

The competition for water between agricultural, industrial, and domestic users is increasing.

Ground water is falling in many areas under the impact of greater use. Salt water is encroaching into fresh in some areas.

Irrigated acreage can be expected to increase to the extent of the water supply in most areas. Because of rising costs of production, farmers no longer can afford to lose a crop due to unfavorable weather.

The greatest single opportunity for improving irrigation efficiency lies in improving the efficiency of application on the farm.

At present, only one-fourth of the water diverted for irrigation is actually used by the crops, another one-fourth is lost from the margin of the field and delivery to the root zone of the crop. By the best methods application efficiencies of 90 percent or more have been accomplished. The other half of the water diverted to irrigation is lost before it gets to the farm. (19)

It is anticipated that by 1975 our needs for water will be nearly double what they are now. Industrial demand will use an estimated 80 percent of this increase.

Forest and Woodland

In days of farm surpluses, the fact is apt to be overlooked that the forest crop is not in surplus and future requirements will put heavy demands on the total forest resource. While industrial and public forests have made notable advances, farm woodlands and other small private holdings are in the poorest condition. Some progress has been made, but these lands are lagging and present a difficult situation. The problem of putting these holdings under scientific management and production is primarily one of people. It will be necessary to reach soon the $4\frac{1}{2}$ million owners, including 3.4 million farmers, if we are to strengthen the farm forest economy and meet future national requirements for forest products.

HIGHLIGHTS OF THE FOREST SITUATION (6)

47 billion board feet net annual growth.

49 billion board feet net annual cut (1952).

489 million acres of commercial forest land.

Sawtimber growth is increasing and was 9 percent more in 1952 than in 1944.

The potential demand for industrial wood consumption for 1975 (fuelwood excluded) is estimated from 25 percent to 40 percent over the 1952 consumption.

The actual course taken will depend on population trends, competitive factors, price situation, and progress in production of forest products.

WEAK SPOTS IN THE FOREST ECONOMY

Timber quality is declining.

One-fourth of forest land is poorly stocked.

One-fourth of timber cut is not used, but left as unused logging or plant residue.

Thirteen billion board feet of sawtimber is killed by destructive agents.

Fifty million acres need to be planted.

FARM AND OTHER PRIVATE WOODLANDS PRESENT MAJOR PROBLEM

Farm woodlands and the small private holdings interspersed with them make up the area of extension work in forestry. These owners hold 60 percent of the commercial forest land in the United States. Farmers alone control one-third of the commercial forest land and make up three-fourths of all owners. Their holdings are mostly on the better timber growing lands and present the most difficult problems in practicing sound management practices. Even though the forest potential is high, actual production is low. The U. S. Forest Service has pointed out that farm and other small private holdings are the key to the national future timber supply.

THE CHALLENGE

A program intensive enough to change individual farm forest liabilities into assets, and extensive enough to reach a larger number of the 4.5 million owners and guide them in the application of improved management practices, is a challenge to both woodland owners and public

agencies. We need to build up our farm forest resources with a view to getting highest yields in the shortest period.

If the problem is attacked vigorously, it is possible within the next decade to make substantial progress in changing the general farm forest picture of low production to one of good production and thereby contribute its fair share to the farm income and to the national timber supply.

Fish and Wildlife

This segment of agriculture is often overlooked in many States. Twelve States now have extension specialists who work with fish and wildlife programs and many other States participate one way or the other. Extension records show that in recent years, more than 190,000 wildlife projects were established on farms. In addition, more than 200,000 4-H Club members received training in wildlife conservation. (3)

The increased interest shown by sportsmen throughout the country by the purchase of a million more fishing licenses during 1954 than 1953 emphasizes the anticipated trend for more thought in this field. The most serious educational problems in the wildlife conservation field center around farmer-rancher landowners. These are habitat improvement programs, control of wildlife depredations on crop lands, farm and ranch ponds, fire prevention and protection, the posting problem, farmer-sportsmen relations in general, and improved use and marketing of the fur crop.

As we view older parts of this country and better managed agricultural lands of Europe, we see a trend toward better land use. In the complete well-planned farming program, provisions are made to use the non-agricultural lands on the farming areas by providing food and protection for wildlife. As interest increases in water storage for irrigation and industrial uses, it will also provide better fishing. The health, vigor, and abundance of fish and wildlife in our ponds, streams, and fields depend on the way we use our soil, water, and plant life.

Recreation

SITUATION

Use of Outdoor Recreation Areas

Use at TVA dams and reservoirs -- In 1948, use for recreational purposes represented a 100 percent increase over greatest prewar year. However, more than 25 million personal day visits were made to TVA facilities during 1955 as compared with some 7 million in 1947. *

Recreation use in national forests -- In 1954, 40 million people

* Private communication with TVA Information Office, Washington, D. C.

visited the national forests for recreation. This was an increase of 50 percent over 1950 and 150 percent over 1940. (13)

Use at State Parks -- 166 million people used our State parks in 1954 as compared to 114 million in 1950 and 66 million in 1940. *

Use at National Parks -- 48 million people were recorded in 1954, nearly a 50 percent increase over 1950 and more than double the 1940 visits.

Hunting and fishing licenses sold -- By 1954 there were about 25 percent more fishing licenses sold than in 1950 and about $2\frac{1}{2}$ times as many in 1940. The hunting licenses sold in 1940, 1950, and 1954 were 8 million, 13 million, and 16 million respectively. Duck stamp annual sales doubled in this 14-year period. ** To this must be added a large number of people who take advantage of salt water or coastal fishing, and fishing in national parks where a license is not required.

It has been estimated that hunter and forest recreationists will nearly double in the next 20 years. If this is true, private lands will have to help carry the burden of already crowded public recreation areas. No doubt, too, public lands will have to stand additional uses.

The demand for and use of outdoor recreation areas and facilities is increasing at a very rapid rate. This increase reflects people's desire to spend their leisure time in the open, as well as their improved financial status. More people multiplied by more money each, plus more time to spend it equals more money spent on recreation of all kinds.

Since 1930 there has been a continued increase in the building of farm ponds which not only conserve water and provide food, but afford swimming, skating, and fishing facilities. There are a total of 627,463 ponds in soil conservation districts according to SCS records. This does not include privately constructed ponds built outside soil conservation districts. ***

Some Factors Affecting Recreation

Factors affecting recreation requirements in the United States include increased population; increased urbanization, especially in rural nonfarm areas; improved transportation; increased leisure time; increased living tension; increased interest in outdoor recreation; and increased per capita income. The per capita expenditure for recreation increased from \$32.10 in 1930 to \$28 in 1940 and to \$76 in 1950.

RECREATION AREA NEEDS

Public recreation areas providing a wide range of beneficial

* Private communication with National Park Information Office, Washington

** Private communication with Wildlife Service, Washington, D. C.

*** Private communication with Soil Conservation Service, Washington, D.C.

activities are urgently needed for frequent use by urban people. They should provide: playgrounds, parks, streams that are protected from pollution and "uglifying" uses, and parkways along waterways.

Recreation areas of natural environment are needed within 25 miles of city limits.

Rural residents need parks, playground areas, and other recreational facilities. Group activities have a special place in the rural setting. Rural and urban people enjoy much the same kinds of recreation, yet rural areas are short on recreation facilities. It is estimated that perhaps two-thirds of the rural population do not participate in water recreation activities because of lack of adequate facilities within reasonable access. Young people especially desire adequate recreation facilities. There is need for many more camping facilities for such groups as the 4-H Clubs. There is also need for prompt action to relieve the rundown unsanitary condition of overused recreation areas.

For vacation use by all people there is need for extensive public holdings providing forests, rugged terrain, lakes, and streams.

For special recreation use, parkways, trails, trailways, and waysides should be established and routes for water travel should be maintained for recreation purposes.

Recreation use should be recognized in all land-use planning and full consideration of recreation resources should be given to lands managed primarily for other purposes. In the total picture the number of people who can enjoy the advantage of recreation on their own farms or lands otherwise privately held far exceeds the recreational use made of publicly owned recreational properties. Educational programs in the future should take this into account.

All our people can profit from educational programs focused on nature appreciation and allied fields. Whether the person comes from the country or the city, he can profit much from an understanding and appreciation of such gifts of nature as: the flora and fauna, the celestial bodies, cloud formations, and so forth.

Credit

Credit is one of the more important business tools that farmers use to balance, expand or intensify the factors of production, land, labor, and capital. Usually it has been employed to finance ownership of, or fairly immediate use of the natural resources of soil, water, and forests. The demand for credit for conservation or longer time use of these resources is comparatively recent.

SITUATION CHANGES

The volume of real estate mortgage credit on farms reached a peak

of \$10.7 billion in 1923 and declined to \$4.7 billion in 1946. (20) Since then it has been rising somewhat faster than the increase in land values and on January 1, 1956, it is estimated at \$9.0 billion. (11) The 6-year trend of over \$500 million increase per year indicates a probable debt of about \$11 billion by 1960. In 1923 farm mortgage debt represented about 20 percent of the value of farm land and buildings, in 1946 about 7.5 percent, and in 1956 approximately 10 percent.

The volume of short-term farm credit has likewise fluctuated widely, and has largely kept pace with changes in farm production expenses. Principal lending institutions held \$1.7 billion in non-real estate loans to farmers July 1, 1940, and \$4.2 billion on the same date in 1953. This amount has continued near the same since then and is likely to remain around that figure for the next 5 years. The same is true for credit which farmers get from trade sources and individuals; this type amounts to about \$3.4 billion more. The total for January 1, 1956, is estimated at \$7.9 billion.

The total agricultural assets in the farm plant in the United States rose from \$53.8 billion in 1940 to \$170 billion in 1952, and is estimated at \$167.6 on January 1, 1956. The major portion of this increase comes from a rise of \$63.4 billion in real estate values; preliminary census figures raise this \$4.0 billion more. However, the relative rise in other physical goods, especially machinery, and in financial assets was considerably greater than for real estate. Most of this change in value of all physical goods and land has resulted from the rise in prices or inflation, but their estimated value in terms of 1940 dollars is up 25 percent. Continued investments in conservation and technological improvements will raise this real increase in production assets further, perhaps more rapidly than during the last 16 years.

TRENDS IN CREDIT SERVICE

Great advances in the farm credit field have been made during the last 40 years. Institutional progress has included a reorganization and strengthening of our commercial banking system; the organization and establishment of a cooperative farm credit system; and the establishment of governmental lending agencies to serve individuals who have little capital, to meet emergency needs and to finance extension of electric service and telephones to farm people. Further legislation has given each of these systems lending capacity for resource conservation purposes. The strength of each of these systems gives much assurance that adequate loan funds will be available to meet farmers' needs at all times.

A general improvement in credit services offered farmers has been made by each of these three systems during this period. Some of the major advances scored include (a) long term amortized loans at low interest rates, (b) loans for production purposes with terms fitted to expense and income schedules with interest usually charged only on amounts outstanding, (c) supervised loans for families needing guidance,

and (d) credit for cooperatives suited to their special needs.

FUTURE DEVELOPMENTS

Present thinking is directed toward improving credit services in what is called the intermediate term field. (21) This includes a large part of the credit associated with conservation of natural resources, such as basic liming and fertilizer treatments for the soil; terracing, contouring and water outlets to prevent erosion; seeding and other pasture improvements; buying breeding livestock; establishing irrigation and drainage systems; and financing the purchase of the costlier pieces of farm machinery. (22)

For forestry the need is chiefly for specialized, long-term credit to be repaid at time of timber harvest. (9) Harvesting and processing loans, however, are important and include some intermediate as well as short-term credit. All three systems are expanding their services here as well as for soil and water.

Through research and experimentation, changes in policy by lenders made effective through regulations, and through legislation where required, distinct progress is being made in providing credit fitted to farmers' needs for these purposes. Probably lenders can be led to provide these loans about as fast as the farmers can learn effective ways of using them.

Legislation

SITUATION

Large sums are appropriated for conservation and use of our natural resources each year by Congress. Nearly \$475 million was available for this purpose during the fiscal year 1956 in the Department of Agriculture alone. * In addition, there are many other departments, bureaus, and agencies concerned with this same problem in the Federal, State, and local governments, and private interests. (2)

TRENDS

Legislation on the use and conservation of natural resources extends over a period of many years and covers the varied aspects involved on both public and private lands. With the early growth of our nation dependent upon the rivers and streams for its transportation, it is only natural that early legislation should deal with navigation. As the country grew and life became more complex, laws pertaining to our natural resources changed from the simple, single objective type of legislation to that which was more comprehensive and multiple of purpose.

There are a great many Federal and State laws that affect man's

* Unpublished data prepared for the report by USDA Bureau of Budget and Finance, Washington, D.C.

use of natural resources. They deal with such things as navigation, use of water for power, flood control, pollution control, water supply for humans, watering of livestock, drainage, irrigation, sediment and salinity control, erosion control, land use, forestry, fish and wildlife, recreation, credit, and income tax allowances for conservation practice expenses. (4, 10, 14, 15, 17, 18) Some laws are nationwide in scope while others apply only to certain areas of the country. Many State and Federal agencies are involved in their administration. The Cooperative Extension Service has a challenge in seeing that the people of the States are adequately informed about those laws and regulations with which they are concerned.

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